

# CALIFORNIA PLANT PEST and DISEASE REPORT



California

Department of Food and Agriculture 1220 N Street, Sacramento, California 95814

What's Inside:	
Vol. 10	Numbers 5-6
October to December, 1991	
Entomology Highlights .....	59
Significant Finds .....	59
New State Records .....	68
New County Records ....	68
Other Significant Finds	69
Exclusion .....	73
Significant Finds in Other States and Countries ....	75
Asian Gypsy Moth .....	79
Border Stations .....	85
Plant Pathology Highlights ....	87
Botany Highlights .....	90
Cumulative Index 1982-92 .....	94



Dalmatian toadflax, *Linaria dalmatica*

This noxious weed, with lovely yellow flowers, is apparently being spread about California via plant swaps and other plant society activities. Please be on the look out for it and help prevent its spread.

Correspondence should be addressed to the editorial staff of the California Plant Pest and Disease Report (see address below).

**California Plant Pest and Disease Report**

**Editor: Raymond J. Gill**

**Production Assistants:**

**Lily Mallare, Brenda Beckwith**

The editor acknowledges the contributions of numerous individuals within the department, without whose cooperation and assistance this project would not be possible.

Correspondence to the CPPDR should be addressed to:

State of California

Department of Food and Agriculture

Analysis and Identification Branch, Rm. 340

1220 N Street

P.O. Box 942871

Sacramento, CA 94271-0001

The California Plant Pest and Disease Report, Volume 10, Numbers 5-6, was issued on December 31, 1991 and printed April 1992.

California Plant Pest and Disease Report is in the public domain and may be freely reproduced with customary crediting of the source.

## ENTOMOLOGY HIGHLIGHTS

MEDITERRANEAN FRUIT FLY, *Ceratitis capitata*, -(A)- Twenty-six separate specimens of this serious fruit fly pest were collected in the Los Angeles area during the last three months of 1991. A sterile release program is now in progress in the area. Data covering the finds are presented in the table on the following page.

ORIENTAL FRUIT FLY, *Bactrocera dorsalis*, -(A)- A total of 101 adult specimens of this fruit fly were trapped in California in 1991, and larvae were collected from peaches at several sites in Rancho Cucamonga, **San Bernardino** County. During the period of this report, 71 were trapped. A male annihilation program is currently underway in a 133-square-mile-area around the finds in Los Angeles and San Bernardino Counties. Data covering the finds are presented in the table on pages 61-62.

MEXICAN FRUIT FLY, *Anastrepha ludens*, -(A)- Eighteen specimens of this perennial fruit fly problem have been collected in California the last part of 1991. Data covering the finds are presented in the table on page 63.

GUAVA FRUIT FLY, *Bactrocera correctus*, -(A)- One specimen of this exotic fruit fly was trapped in **Los Angeles** County this year. The following report by John Pozzi outlines the find:

On November 1, a male guava fruit fly, *Bactrocera correctus*, was trapped in Long Beach. The fly was found in a Jackson/methyl eugenol trap placed in a pineapple guava, along East Via Barola. Los Angeles County trapper Carlos Cadenas is credited with the detection.

Jackson/methyl eugenol trap density in the area was five traps per-square-mile. McPhail and Jackson/methyl eugenol trap densities have been increased as needed over an 81-square-mile area. There are 25 McPhail and Jackson/methyl eugenol traps in the epicenter square mile. Jackson/methyl eugenol trap density will remain at five traps per-square-mile for the remaining 80 square miles.

Previous finds of this fruit fly include Garden Grove, Los Angeles County in 1986, Los Angeles in 1987, San Leandro, Alameda County in 1987 and Los Angeles and Sun Valley, Los Angeles County in 1989.

A FRUIT FLY, *Anastrepha striata*, -(A)- A single specimen of this neotropical fruit fly was captured last fall in the San Joaquin Valley at Fresno. The following report by John Pozzi covers the find:

*Anastrepha striata* was trapped in Fresno on October 11. It was detected in a McPhail trap that had been placed in a grapefruit tree along Holly Avenue. Fresno County Agricultural Standards Specialist John Dias is credited with finding this exotic fruit fly.

McPhail trap density in this area was two traps-per-square-mile. In response, the McPhail trap density has been increased to an 80 - 40 - 20 - 10 - 5 array in an 81-square-mile-area around the find.

### Mediterranean Fruit Fly, *Ceratitis capitata*, - (A)- 1991 Collections

County	City	Date	#M/F/Stage	Trap	Host	Collectors
Los Angeles	Los Angeles	10/7	0/1	McPhail	peach	Hendrickson
Los Angeles	Los Angeles	10/11	1/0	Jackson	guava	Baltazar
Los Angeles	Los Angeles	10/20	1/0	Jackson	orange	Carreno/Vargas
Los Angeles	Los Angeles	10/21	1/0	Yellow panel	persimmon	Householder
Los Angeles	Los Angeles	10/22	1/0	Yellow panel	ornamental	Vasquez
Los Angeles	San Gabriel	10/23	0/1	Jackson	persimmon	Dunham
Los Angeles	Los Angeles	10/24	1/0	Yellow panel	persimmon	Foster
Los Angeles	Los Angeles	11/1	1/0	Yellow panel	avocado	Burgason/Canson
Los Angeles	Los Angeles	11/1	1/0	Yellow panel	avocado	Burgason/Canson
Los Angeles	Los Angeles	11/4	1/0	Jackson	guava	Abram
Los Angeles	Los Angeles	11/7	1/0	Yellow panel	guava	Joseph
Los Angeles	Los Angeles	11/7	1/0	Yellow panel	orchid	Romo
Los Angeles	Los Angeles	11/9	0/1	McPhail	lemon	Carreno
Los Angeles	Los Angeles	11/11	2/0	Yellow panel	avocado	Romo
Los Angeles	Los Angeles	11/12	1/0	Yellow panel	avocado	Burgason
Los Angeles	Los Angeles	11/12	1/0	Yellow panel	orange	Ferris
Los Angeles	Los Angeles	11/16	1/0	Yellow panel	lemon	Camacho
Los Angeles	Los Angeles	11/23	1/0	Yellow panel	ornamental	Davis/Yepez
Los Angeles	Los Angeles	11/25	1/0	Yellow panel	loquat	Ochoa
Los Angeles	Los Angeles	11/26	2/0	Yellow panel	lemon	Andrade
Los Angeles	Los Angeles	12/3	1/0	Yellow panel	ornamental	Ferris
Los Angeles	Los Angeles	12/6	3/0	Yellow panel	ornamental	Bishop/Hooper/
						Rodarte

### Oriental Fruit Fly *Bactrocera dorsalis* - (A)- Last Quarter 1991 Collections

<u>County</u>	<u>City</u>	<u>Date</u>	<u>#M/F/Stage</u>	<u>Trap</u>	<u>Host</u>	<u>Collectors</u>
San Bernardino	Rancho Cucamonga	10/1	1/0	Jackson	apple	Lopez
San Bernardino	Upland	10/1	1/0	Jackson	orange	Stevenson
San Bernardino	Rancho Cucamonga	10/1	1/0	Jackson	peach	Sarmiento
San Bernardino	Rancho Cucamonga	10/1	1/0	Jackson	nectarine	Sarmiento
San Bernardino	Rancho Cucamonga	10/1	1/0	McPhail	nectarine	Sarmiento
San Bernardino	Rancho Cucamonga	10/1	4/0	Jackson	peach	Sarmiento
San Bernardino	Ontario	10/1	1/0	Jackson	orange	Johnson
San Bernardino	Rancho Cucamonga	10/1	1/0	Jackson	apple	Lopez
San Bernardino	Fontana	10/2	1/0	Jackson	lemon	Lopez
San Bernardino	Rancho Cucamonga	10/2	1/0	Jackson	orange	Gonzalez
San Bernardino	Rancho Cucamonga	10/2	1/0	Jackson	nectarine	Sarmiento
San Bernardino	Rancho Cucamonga	10/2	1/0	Jackson	orange	Sarmiento
San Bernardino	Rancho Cucamonga	10/2	1/0	Jackson	orange	Sarmiento
San Bernardino	Rancho Cucamonga	10/2	2/0	Jackson	orange	Sarmiento
San Bernardino	Rancho Cucamonga	10/2	0/1	McPhail	peach	de la O
Los Angeles	Los Angeles	10/2	1/0	Jackson	olive	Stevenson
San Bernardino	Ontario	10/2	1/0	Jackson	peach	Sarmiento
San Bernardino	Rancho Cucamonga	10/3	1/0	Jackson	olive	Lopez
San Bernardino	So. Ontario	10/3	1/0	Jackson	orange	Stevenson
San Bernardino	Upland	10/4	1/0	Jackson	orange	Sarmiento
San Bernardino	Rancho Cucamonga	10/4	1/0	Jackson	orange	Johnson
San Bernardino	Ontario	10/8	1/0	Jackson	olive	Johnson
San Bernardino	Ontario	10/8	0/2	McPhail	fig	Johnson
San Bernardino	Rancho Cucamonga	10/8	0/1	McPhail	apple	Sarmiento
San Bernardino	San Bernardino	10/8	L	N/A	peach	Haro/Gaona
San Bernardino	Claremont	10/10	1/0	Jackson	oak	Garcia
San Bernardino	Guasti	10/14	0/1	McPhail	fig	Rahn
San Bernardino	Rancho Cucamonga	10/15	0/1	McPhail	pineapple guava	Almanza/Walker
San Bernardino	Rancho Cucamonga	10/15	0/1	McPhail	peach	Lovato
Los Angeles	Ontario	10/15	1/0	Jackson	apricot	Rahn
San Bernardino	Rancho Cucamonga	10/15	0/1	McPhail	pomegranate	Stevenson
San Bernardino	Upland	10/15	1/0	Jackson	peach	Dietz
San Bernardino	Glendora	10/15	1/0	Jackson	orange	Quinones
Los Angeles	Azusa	10/16	1/0	Jackson	peach	Rahn
San Bernardino	Guasti	10/16	1/0	McPhail	fig	Lovato
San Bernardino	Upland	10/16	0/1	McPhail	fig	

## Oriental Fruit Fly, *Bactrocera dorsalis*, -(A)- Last Quarter 1991 Collections (continued)

<u>County</u>	<u>City</u>	<u>Date</u>	<u>#M/F/Stage</u>	<u>Trap</u>	<u>Host</u>	<u>Collectors</u>
Alameda	Fremont	10/16	1/0	Jackson	apple	Myers
	Rancho Cucamonga	10/17	0/1	McPhail	lemon	Rahn
San Bernardino	La Verne	10/18	1/0	Jackson	ornamental	Sanchez
Los Angeles	Glendora	10/20	1/0	Jackson	guava	Pandae
Los Angeles	San Diego	10/21	1/0	Jackson	lemon	Rogers
San Diego	Rancho Cucamonga	10/22	0/1	McPhail	apple	Almanza
San Bernardino	Rancho Cucamonga	10/23	L	N/A	peach	Williams/Rahn
San Bernardino	Squirrel Valley	10/23	1/0	Jackson	persimmon	Holland
Kern	Rancho Cucamonga	10/24	0/1	McPhail	orange	Rahn
San Bernardino	Rancho Cucamonga	10/24	0/1	McPhail	fig	Busatto
San Bernardino	Los Angeles	10/24	1/0	Jackson	peach	Hoverster
Los Angeles	Hawthorne	10/26	0/1	McPhail	orange	Cardenas
Los Angeles	Lakewood	10/29	1/0	Jackson	orange	Johnson
San Bernardino	Rancho Cucamonga	10/31	0/1	McPhail	orange	Johnson
San Bernardino	Rancho Cucamonga	10/31	0/1	McPhail	peach	Johnson
San Bernardino	Rancho Cucamonga	10/31	0/1	McPhail	orange	Rahn
San Bernardino	Rancho Cucamonga	11/5	0/1	McPhail	apricot	Lopez
San Bernardino	Rancho Cucamonga	11/6	0/1	McPhail	orange	Johnson
San Bernardino	Rancho Cucamonga	11/6	0/1	McPhail	fig	Rahn
San Bernardino	Ontario	11/12	0/1	McPhail	apple	Huff
San Bernardino	Rancho Cucamonga	11/13	1/0	McPhail	orange	Rahn
San Bernardino	Rancho Cucamonga	11/13	0/1	McPhail	orange	Rahn
San Bernardino	Upland	11/14	0/1	McPhail	orange	Johnson
San Bernardino	Rancho Cucamonga	11/14	0/1	McPhail	fig	Rahn
San Bernardino	Upland	11/14	0/1	McPhail	persimmon	Huff
San Bernardino	Upland	11/21	1/0	McPhail	peach	Rahn
Los Angeles	Long Beach	11/22	1/0	Jackson	ornamental	Alcantar
San Bernardino	Rancho Cucamonga	11/26	1/0	McPhail	kumquat	Rahn
San Bernardino	Rancho Cucamonga	11/27	1/0	McPhail	lemon	Rahn
Los Angeles	Glendora	11/27	1/0	Jackson	tangerine	Dietz
San Bernardino	Rancho Cucamonga	12/9	0/1	McPhail	orange	Rahn
San Bernardino	Ontario	12/20	1/0	McPhail	orange	Rahn
San Bernardino	Ontario	12/27	1/0	McPhail	orange	Rahn

**Mexican Fruit Fly, *Anastrepha ludens*, - (A)- 1990 Collections**

<u>County</u>	<u>City</u>	<u>Date</u>	<u>#M/F/Stage</u>	<u>Trap</u>	<u>Host</u>	<u>Collectors</u>
Los Angeles	Maywood	11/5	1/0	McPhail	orange	de la O
Los Angeles	Los Angeles	11/7	0/1	McPhail	guava	Mitzubayashi
Los Angeles	Maywood	11/12	0/1	McPhail	persimmon	Logan
Los Angeles	Maywood	11/13	0/1	McPhail	lemon	Logan
Los Angeles	Maywood	11/13	0/1	McPhail	guava	Logan
Los Angeles	Chula Vista	11/13	0/1	McPhail	orange	Jones
San Diego	Maywood	11/14	0/1	McPhail	persimmon	Carrera
Los Angeles	Maywood	11/14	0/1	McPhail	fig	London
Los Angeles	Lennox	11/14	0/1	McPhail	orange	Cardona
So. San Diego	So. San Diego	11/15	0/1	McPhail	orange	Yates
Los Angeles	Maywood	11/16	1/1	McPhail	orange	Diaz
Los Angeles	Maywood	11/20	0/1	McPhail	lemon	Diaz
Los Angeles	Maywood	11/20	2/0	McPhail	guava	Diaz
Los Angeles	Bell	11/22	0/1	McPhail	orange	Logan
National City	National City	11/25	1/0	McPhail	sapote	Luehring
Bell Gardens	Bell Gardens	12/19	0/1	McPhail	guava	Vargas
Los Angeles	Los Angeles	12/23	1/0	McPhail	orange	Rodriguez

GYPSY MOTH, *Lymantria dispar*, -(A)- Remains of an immature stage of this serious forest pest were found this fall in **Santa Cruz County**. The following report by John Pozzi outlines the initial find:

While conducting a visual survey in the vicinity of gypsy moth (GM) trap finds in Aptos, Santa Cruz County Department of Agriculture and CDFA personnel found a GM pupal skin. Three GM were trapped in this area in 1990 and 1991.

Santa Cruz County Agricultural Commissioner Dave Moeller, Agricultural Biologist Mary Lou Nicoletti, and CDFA detection Entomologist Ray Bingham are credited with making the find. The find was made on October 2.

Other finds include empty eggs and other immature lifestages from the same general vicinity in the town of Aptos. Collections were made on October 17 by CDFA Inspector Eric Olson, by CDFA Entomologist Donna Daniels at two separate locations on October 23.

APPLE MAGGOT, *Rhagoletis pomonella*, -(A)- Several collections of this serious apple pest were made this fall in northwestern California:

<u>County</u>	<u>City</u>	<u>Date</u>	<u>#M/F/Stage</u>	<u>Host</u>	<u>Collector</u>
Siskiyou	Somes Bar	10/2	1L	Malus sp.	Ferlatte
Mendocino	Boonville	9/15	1/3	All purpose trap	Peterson
Mendocino	Elk	9/29	0/1	AM trap	Peterson
Sonoma	Forestville	10/9	0/1	AM Trap	Milligan
Humboldt	Hoopa	9/27	0/1	All purpose trap	Spadoni
Humboldt	Bridgeville	9/26	0/5	All purpose trap	Spadoni
Sonoma	Guerneville	10/10	1P	Crataegus sp.	Czarnecki

A TUSSOCK MOTH, *Orgyria* sp., -(Q)- Dead immature stages of this eastern moth pest were found by Ray Bingham while conducting a gypsy moth survey in Aptos, **Santa Cruz County**. The collection was made on October 2.

PINK BOLLWORM, *Pectinophora gossypiella*, -(A)- This serious cotton pest has been a problem in the Imperial and Palo Verde Valleys of southern California for a number of years. The pest has been trying to gain a foothold in the rich cotton-growing areas of the southern San Joaquin Valley of California for several years. The following report by the CDFA Control and Eradication staff outlines the current battle against it:

Since 1967, pink bollworm damage to San Joaquin Valley cotton has been prevented by a cooperative county-state-federal program that uses high technology and modern scientific practices rather than conventional pesticides. State personnel monitor up to 1.5 million acres of cotton using pheromone (sex lure) baited traps to detect incipient infestations of pink bollworm. These infestations are then eradicated by release of sterile pink bollworm moths and with pheromone confusion treatments before destructive populations can develop. The sterile moths are reared at the USDA facility in Phoenix, Arizona and aerially released in the San Joaquin Valley.

Growers shred and plow-under cotton stalks following harvest and maintain a 90-day host-free period during the winter months to prevent overwintering of incipient infestations resulting from late season moth blow-ins.

The 1991 cotton-growing season started out very slowly because of prolonged March rains and cool weather. Project personnel mapped 1,103,962 acres of cotton, down 6.8 percent from 1,154,231 acres mapped in 1990. Pima cotton planting amounted to 63,455 acres or 5.7 percent of the total acreage planted. The remaining 1,040,507 acres (94.3 percent) were planted to Acala cotton.

General trapping activities (one trap per 60 acres of cotton) began June 4. Total traps deployed was about 18,500, inspected weekly through October 18. All traps were removed by October 24. Early season trapping was done from May through June to detect possible overwintering populations in areas having last year's native catches. These areas are trapped at one trap per 20 acres. There is a special desert trap line to detect blow-in activity.

This season the pink bollworm taxonomy lab in Visalia examined 76,915 traps containing suspect moths submitted by trappers. Totals of 3,733,208 sterile and 263 native moths were identified this season in these San Joaquin Valley traps. The number of traps examined and the number of steriles identified is substantially higher than last year. Trapping of blow-in moths from Southern California and Western Arizona cotton growing regions usually begins in late September. The desert trap line, used to detect blow-in activity, caught 26 native moths since September 26.

#### HISTORIC NATIVE MOTH CAPTURES IN SAN JOAQUIN VALLEY COUNTIES BY YEAR

<u>YEAR</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
KERN	305	39	42	118	265	121	1588	151
TULARE	33	20	11	38	255	10	1459	16
KINGS	7	6	5	66	282	11	59	16
FRESNO	3	87	3	71	70	20	108	79
MADERA	0	1	1	3	9	2	7	1
MERCED	3	7	0	0	10	2	18	0
<b>TOTAL</b>	<b>351</b>	<b>160</b>	<b>62</b>	<b>296</b>	<b>891</b>	<b>166</b>	<b>3239</b>	<b>263</b>

Sterile moth releases began May 14 and continued through October 18, averaging almost six million moths per release day. Number of native moths caught during the previous and current season determines the release rate and area. Path-Link system

computers record and display daily flight paths for each aircraft. Sterile moth distribution is also monitored by trap catches. Aerial releases were conducted six days a week and the cumulative season total in 1991 was a record 813 million moths.

In addition to sterilized moths, the program in 1991 used multiple aerial pheromone treatments beginning at pin-square on 2,065 acres of cotton in the Buttonwillow area of Kern County, where overwhelming numbers of native moths and larvae were found in 1990. No native moths were trapped in any of the 1990 problem areas. Growers deserve most of the credit by accomplishing an outstanding plowdown. A record-breaking freeze also helped.

The only critical pink bollworm problem area during the 1991 cotton growing season in the San Joaquin Valley was near the Lemoore Naval Air Station runway in Fresno County. Recurring catches of small numbers of native moths indicate an incipient infestation being controlled by sterile moths in numbers adequate to achieve eradication without the need for pheromone treatment to disrupt mating.

A bloom and boll survey was added to this year's program in the San Joaquin Valley. Selected cotton fields were surveyed for rosetted blossoms and a minimum of 250 green bolls per field was collected to check for larvae. No larvae were found.

Grower-sponsored legislation this year doubled the penalties for repeated plowdown violations to \$1,000 plus \$10 per acre. The bale-assessment was increased from \$2 to \$2.50 per bale as recommended by the Cotton Pest Control Board to cover projected decrease in production due to drought and increased program costs to deal with 1990 pink bollworm infestations. This fee amounts to \$5 per acre compared to \$80 - \$200 chemical treatment cost that growers pay to control this pest in areas where pink bollworm is a major problem.

**COTTON BOLL WEEVIL, *Anthonomus grandis*, -(A)-** This pest of cotton in the southern United States has been attempting to invade California for many years. Just recently the weevil did become established in the southeastern desert areas of the state, but an eradication program has apparently been successful. The following report by the CDFA Control and Eradication staff outlines the situation in 1991:

This continues to be an excellent year for California in its efforts to keep the state free of the boll weevil. No weevils have been trapped this year and only two weevils were trapped last year. Both were collected in the same trap on November 19, 1990 on the edge of a cotton field located near Ripley, in the Blythe/Pale Verde Valley area of Riverside County. In 1989, one weevil was trapped in this general area in early December and another was trapped in November in the Bard/Winterhaven area of Imperial County (see attached summary sheet). No treatments have been required for the past three years.

Late season migrating weevils from Arizona and Mexico will continue to pose a problem for California's boll weevil detection program, especially in cotton growing

regions of Imperial and Riverside Counties. Trapping programs administered by CDFA and operated under contract with the County Agricultural Commissioners offices in cotton growing counties are California's first line of defense against this serious pest. Some 3,600 boll weevil traps are operated by the counties statewide on a contracted budget of \$204,538.

#### ARIZONA AND MEXICO

The Southwest Boll Weevil Eradication Project is progressing very well. The original areas of the program along the Colorado River remain free of weevils, except for late season migration (see summary sheets). This includes areas in both Arizona and Mexico.

The main problem area is Caborca, Mexico. Weevils moving out of infested cotton in this region reinfest cotton growing in the Sonoita control areas, migrate west to traps in San Luis and even as far as Mexicali cotton growing areas. These weevils are also trapped in Southern Arizona's cotton growing areas along the Gila River, as expressed by trap captures in Aztec, Welton and Gila Bend.

Arizona weevil populations have been substantially reduced from those of previous years. Program management reports that no evidence was found of any boll weevil populations in Arizona cotton. Program managers are confident that eradication has been achieved.

ACARINE MITE, *Acarapis woodi*, -(A)- This honeybee pest was collected during an apiary inspection at Montague, **Siskiyou** County on October 30 by Peter Nesbitt.

VARROA MITE, *Varroa jacobsoni*, -(A)- This mite was collected from an apiary in Tustin, **Orange** County by County Entomologist Nick Nisson on December 25.

TULIPTREE SCALE, *Toumeyella liriodendri*, -(A)- Several collections of this serious scale pest were made in the bay area this fall. Infestations include finds along Glenn Drive in San Leandro, **Alameda** County on December 18 and 20. The infested, flowering magnolias were discovered by County Agricultural Biologists Gonsalves and Curry.

AUSTRALIAN SOD FLY, *Inopus rubriceps*, -(B)- Specimens of this turf pest were collected in Menlo Park, **San Mateo** County. Specimens were submitted by County Agricultural Biologist Nancy Mulder on October 2. Another collection was made in Hayward, **Alameda** County by Agricultural Biologist Ken Peek on October 7. This insect is known from the counties of Alameda, Contra Costa, San Francisco, San Mateo, Sonoma and Santa Cruz.

TORPEDO BUG, *Siphanta acuta*, -(B)- This flatid planthopper was first found established in San Diego County in 1983, [see CPPDR 2(1):10]. Last year it was collected from the town of Millbrae, **San Mateo** County by Mendocino County Inspector Jim Xerogeanes while on a visit in that area. On December 26, Jim collected another adult specimen and had one get away. This adds

further impetus to the thought that the species is in fact established outdoors in that city. Also, in a nearby area of San Francisco, cast nymphal skins of what is probably this species were submitted with ash whitefly pupae on citrus leaves. The samples were mailed by a homeowner to the commissioner's office on December 1.

## NEW STATE RECORDS

BLACK-HEADED ANT, *Tapinoma melanocephalum*, -(Q)- This ant, related to the common California species, *Tapinoma sessile*, the odorous house ant, has been found for the first time in the state in **Orange** County. The following report by George Loughner outlines the discovery:

*Tapinoma melanocephalum*, a new ant, was recently identified from the Newport Beach area. The Department's historical records indicated that the species has been intercepted in quarantine many times but has not been collected in California. Roy Snelling at the Los Angeles County Museum has never collected the ant in California and the museum has no record of it in their collection. The ant is distributed in tropical and sub-tropical areas of the world and is found in Florida. Roy Snelling said he would not be surprised to find it in California as it is associated with human habitats, much the same as the Argentine ant. Mr. Snelling believes the Argentine ant would out-compete *T. melanocephalum* as they have similar, or the same, food requirements and the Argentine ant is able to survive under harsher conditions. *T. melanocephalum* probably could establish along the southern coastal areas but would not become as pesky as the Argentine ant, and in colder climates could not survive outside the greenhouses.

*T. melanocephalum* poses no direct threat to agriculture except under greenhouse conditions, and would probably be a lesser pest than the Argentine ant in urban settings, depending on local circumstances. However, if the current population of *T. melanocephalum* is limited to the find site, an over-the-counter ant pesticide formulated as bait or spray would remove any chance of this exotic ant becoming established in California.

The collection was made by the homeowner, who submitted it to the county agricultural department on October 31. Further collections of the ant were made on adjacent properties to the one above. The finds were made by Gene Drake and Richard Tiffer on December 17.

This ant is essentially identical to the odorous house ant, *Tapinoma sessile*, but is readily separated by coloration. The odorous house ant is a uniform greyish-brown whereas the blackheaded ant has the darkened brown or black head with a straw-colored thorax and other lighter body parts.

## NEW COUNTY RECORDS

ASH WHITEFLY, *Siphoninus phillyreae*, -(C)- Two new county records of this now infamous whitefly have been made in the last part of 1991.

On October 10, Laurie Stout found ash whitefly on ornamental pear trees at the Ocean Street in Santa Cruz, **Santa Cruz** County.

Two collections were recorded in **San Francisco** County. One was made at Potrero Avenue in San Francisco on November 20. The specimens were adults that were resting in large numbers on a pickup truck at that location. Other specimens were mailed to Jay Seslow of the San Francisco Agricultural Commissioner's office on December 1. The specimens were collected by a San Francisco homeowner from a citrus tree.

Ash whitefly is now absent only from the counties of Alpine, Del Norte, Humboldt, Inyo, Lassen, Modoc, Mono, Plumas, Sierra, Siskiyou, and Trinity Counties. See the current distribution map on the following page.

**BLUEGUM PSYLLID**, *Ctenarytaina eucalypti*, -(A)- A considerable range extension occurred with this exotic pest of bluegum eucalyptus as surveys were directed against it last fall. These collections are indicative of a substantial inland movement; all previous records for this psyllid have been from coastal environments. New county records are listed below and a distribution map is included on page 71.

Bluegum psyllid was collected from the hospital grounds at French Camp, **San Joaquin** County by Agricultural Inspector Jim Allan on October 23.

Specimens of bluegum psyllid were collected from the CDFA Meadowview facility in south Sacramento, **Sacramento** County by CDFA Biocontrol Specialist Joe Ball on November 20.

A PSYLLID, *Blastopsylla occidentalis*, -(C)- This species was first recorded from California in 1983 in Los Angeles County. It was collected for the first time from **San Joaquin** County from eucalyptus along Airport Way in Stockton by Agricultural Inspector Jim Allan on October 2.

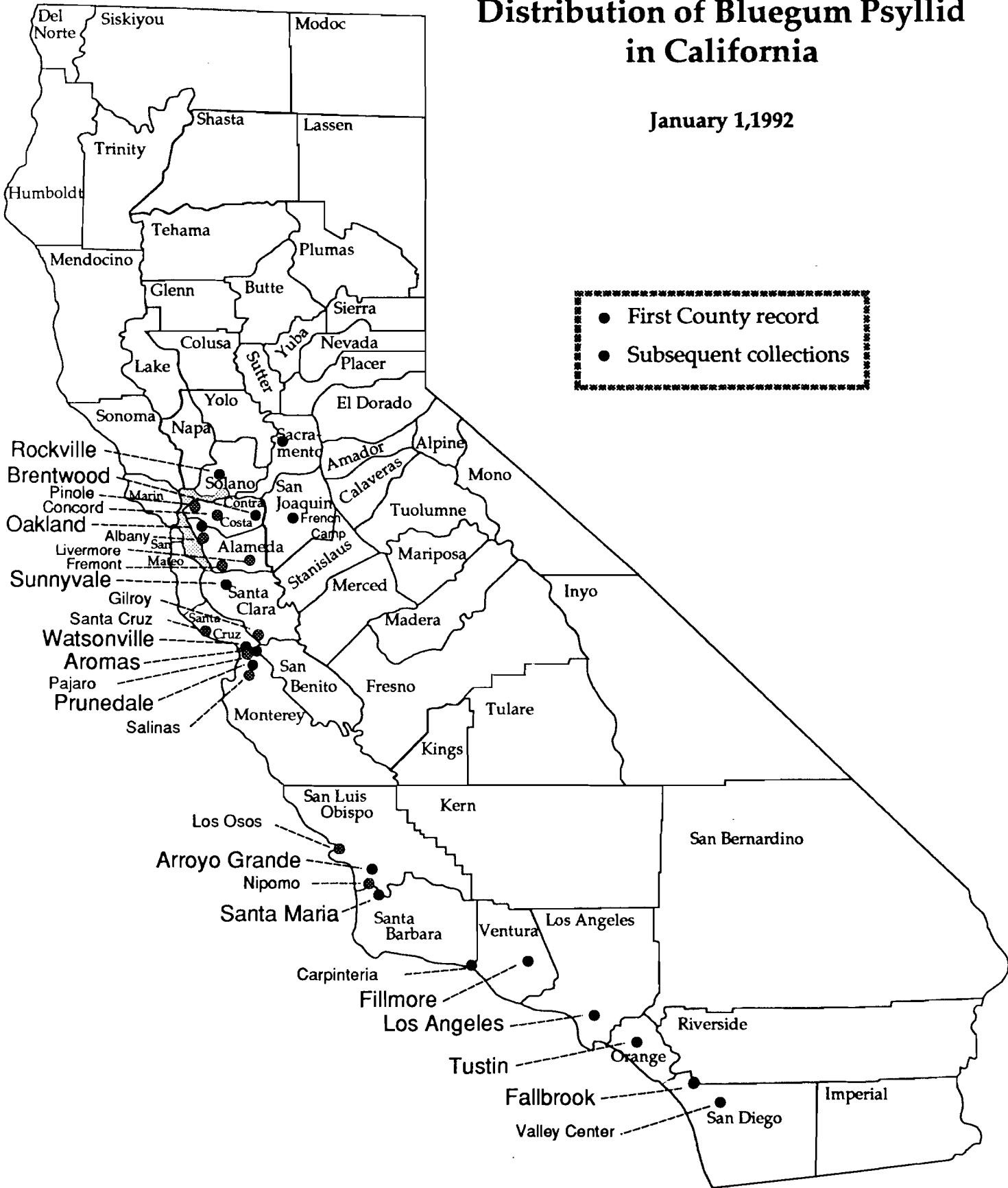
## OTHER SIGNIFICANT FINDS

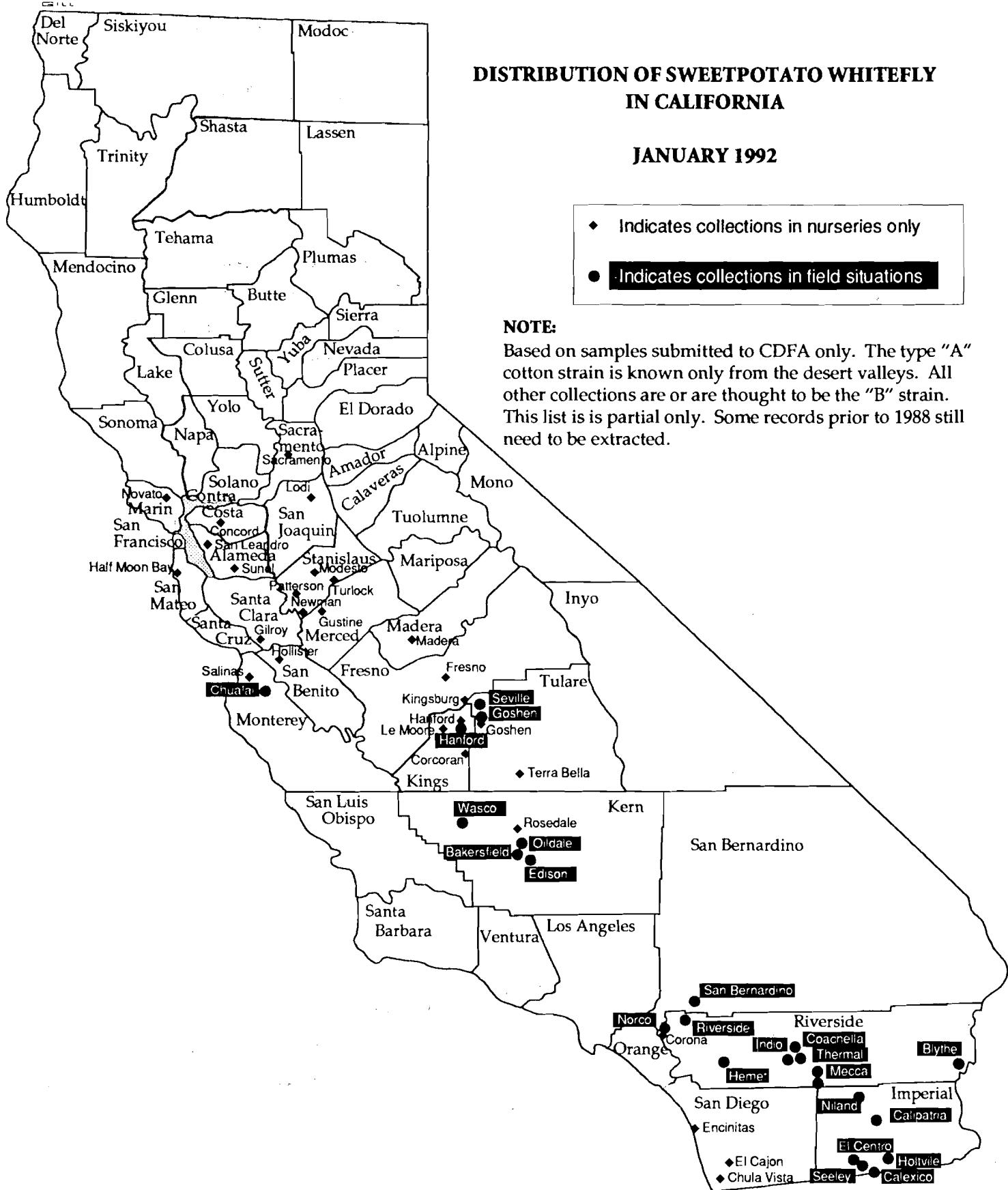
**SWEETPOTATO WHITEFLY**, *Bemisia tabaci*, -(C)- This whitefly, primarily the type B strain, caused serious crop loss in California, Arizona, Texas and Florida during 1991. The pest appears to be overwintering in the Imperial Valley of California in fairly large numbers, so there is much concern about the pest for the 1992 growing season. The map on page 72 outlines the collections of sweetpotato whitefly officially submitted to the CDFA identification laboratory, both from field and nursery collections.



# Distribution of Bluegum Psyllid in California

January 1, 1992





## EXCLUSION

Several serious fruit fly pests along with numerous other exotics were intercepted in quarantine during the last few months of 1991. The following outlines cover the finds.

**MEDITERRANEAN FRUIT FLY**, *Ceratitis capitata*, -(A)- Dee Sudduth collected larvae from fruit of *Coffea arabica* being shipped from Hawaii to La Verne, Los Angeles County on October 7.

**ORIENTAL FRUIT FLY**, *Bactrocera dorsalis*, -(A)- A live adult male fly was found in a box of herbs shipped from Hawaii to Los Angeles, Los Angeles County. The find was made by County Inspector Hajik on December 17.

**GYPSYMOTH**, *Lymantria dispar*, -(A)- Live egg masses of this serious forest pest were collected from the Russian ship Kapitan Dublitsky. The collection was made at the Port of San Francisco by Inspector Gonzalez on November 5. See the article on Asian gypsy moth under the section "Significant Finds In Other States And Countries" on pages 75-84.

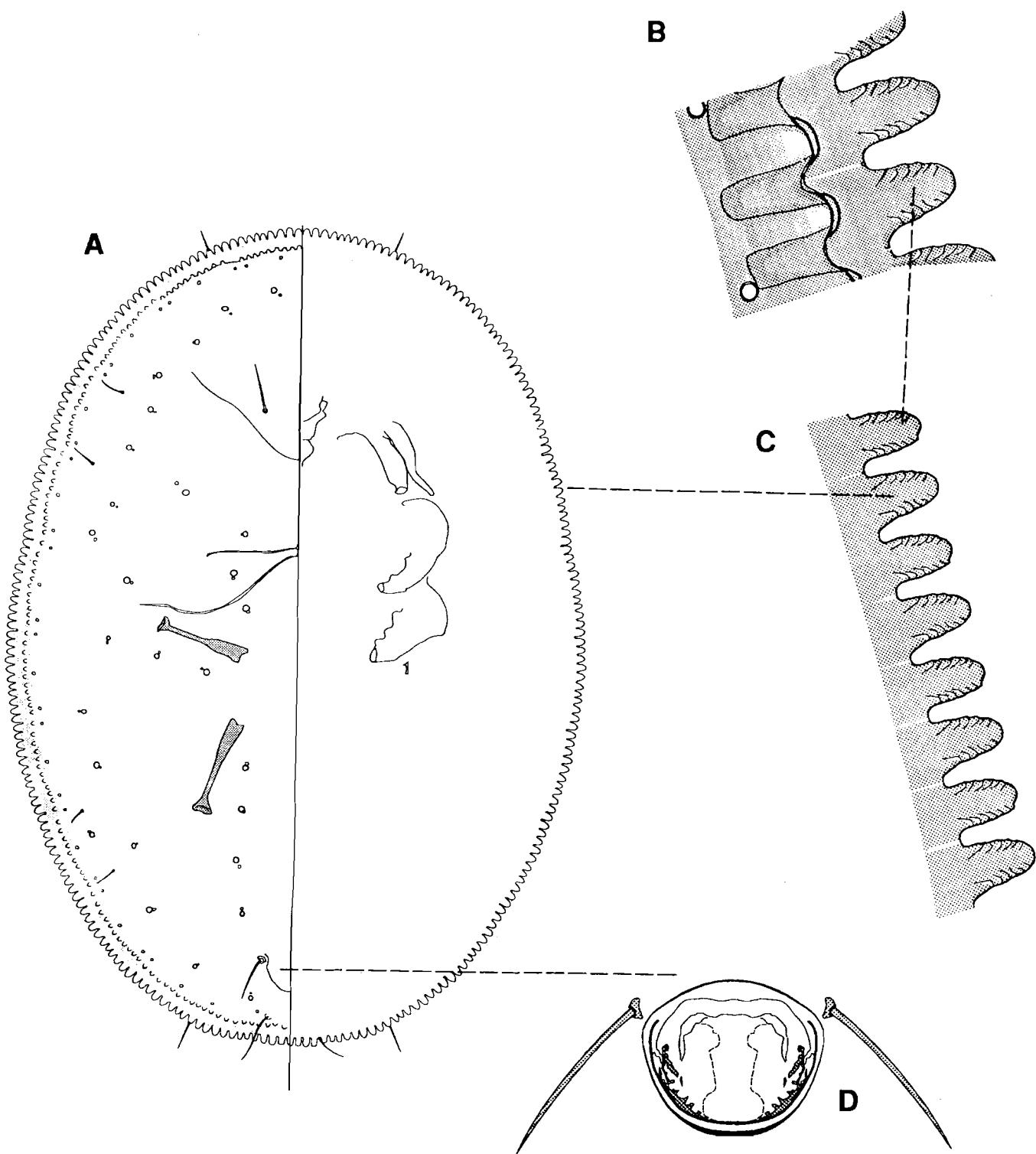
**A WHITEFLY**, *Aleurothrixus antidesmae*, -(Q)- This unique whitefly was intercepted on Hawaiian anthurium flowers in Marysville, Sutter County. The collection was made October 7 by Agricultural Biologists Stan Anderson and Mark Brown. The whitefly was only recently found established in Hawaii, and this collection is a first interception in California. The morphology is unique because of the fleshy, clubbed dorsal setae. An illustration of the pupal morphology will be found on page 74.

**MAGNOLIA WHITE SCALE**, *Pseudaulacaspis cockerelli*, -(A)- This perennial problem scale has been found in several California nurseries during fall 1991.

<u>County</u>	<u>City</u>	<u>Date</u>	<u>Host</u>	<u>Collector</u>
Merced	Merced	9/26	<i>Chrysalidocarpus lutescens</i>	Aguilar
Los Angeles	Redondo Beach	10/8	Areca palm	Kellum
Los Angeles	Hawthorne	11/15	<i>Phoenix palm</i>	Kellum
San Bernardino	Montclair	11/22	<i>Phoenix roebelenii</i>	Davey
Orange	Westminster	12/18	<i>Phoenix roebelenii</i>	Clodt

**MINING SCALE**, *Howardia biclavis*, -(A)- Specimens of this common tropical scale were collected from plumeria branches by Agricultural Inspector Papilli at Laverne, Los Angeles County on November 8. Specimens were also collected from a nursery in Westminster, Orange County by Agricultural Inspector Brian Danker. The collection was made from *Ficus benjamina* on December 20.

**GREEN SHIELD SCALE**, *Pulvinaria psidii*, -(A)- Live adult scales were collected from ornamental *Ficus* plants in a building in San Jose, Santa Clara County. The collection was made by Agricultural Inspector Greg Clark on December 14.



A whitefly, *Aleurothrixus antidesmae*. A. Outline of pupal case (left side dorsal, right side ventral). B & C. Enlargement of margin and submargin. D. Enlargement of vasiform orifice.

DIFFINIS SCALE, *Hemiberlesia diffinis*, -(A)- Specimens of what are apparently this species are being collected from *Ficus benjamina* nursery stock apparently originating in Florida. One such collection was made from a nursery in Westminster, Orange County by County Inspector Brian Danker on December 20.

AN ARMORED SCALE, *Andaspis punicae*, -(Q)- This armored scale insect is not known to occur in the continental United States. It does occur, however, in Hawaii and the Caribbean, and was originally described from Tanganyika, East Africa. Mendocino County Inspector Jim Xerogeanes collected specimens from twigs of *Ficus benjamina* destined for Kelseyville on December 23. The infested plant was an intertwined specimen consisting of four separate plants. The plant had been shipped from Florida via a plant dealer in Oregon. Florida Department of Agriculture officials have attempted to locate other infested plants from the shipping nursery but have been unable to do so. The scale is shaped similarly to purple scale with a brownish, oystershell-like scale cover. The scale is extremely cryptic, burrows under loose bark, and the females are almost impossible to find even with a good dissecting microscope. Male scales are less apt to be buried under the bark and are somewhat easier to spot. The illustrations on the following page indicate morphology and habits of the scale.

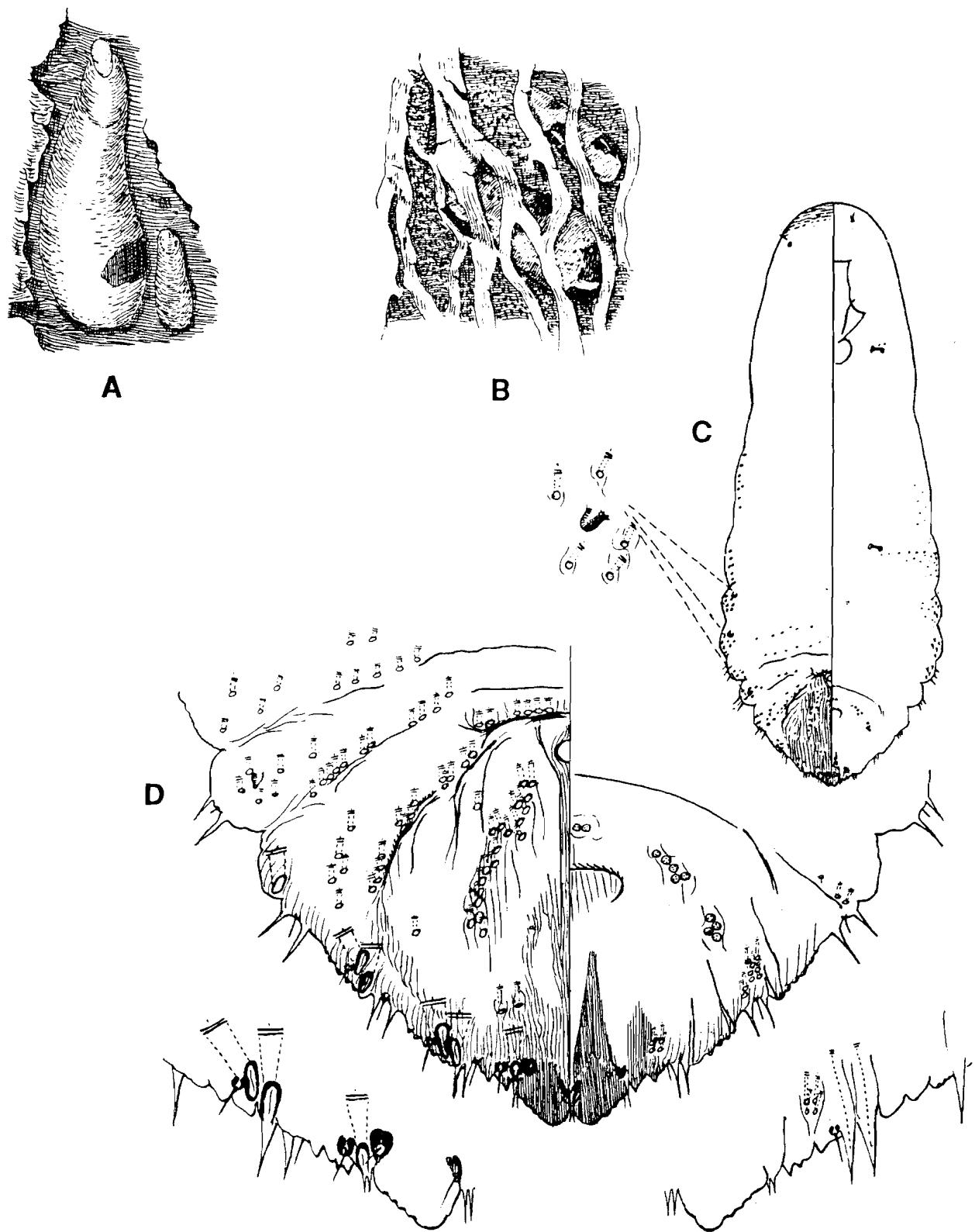
## SIGNIFICANT FINDS IN OTHER STATES AND COUNTRIES

MELON THrips, *Thrips palni*, -(Q)- This thrips has been in Hawaii for several years and was recently discovered in Florida. Many regulatory officials and economic entomologists are concerned that this serious pest species will be introduced into California. For information on its economic potential and distribution see CPPDR 10(1-2):17-18.

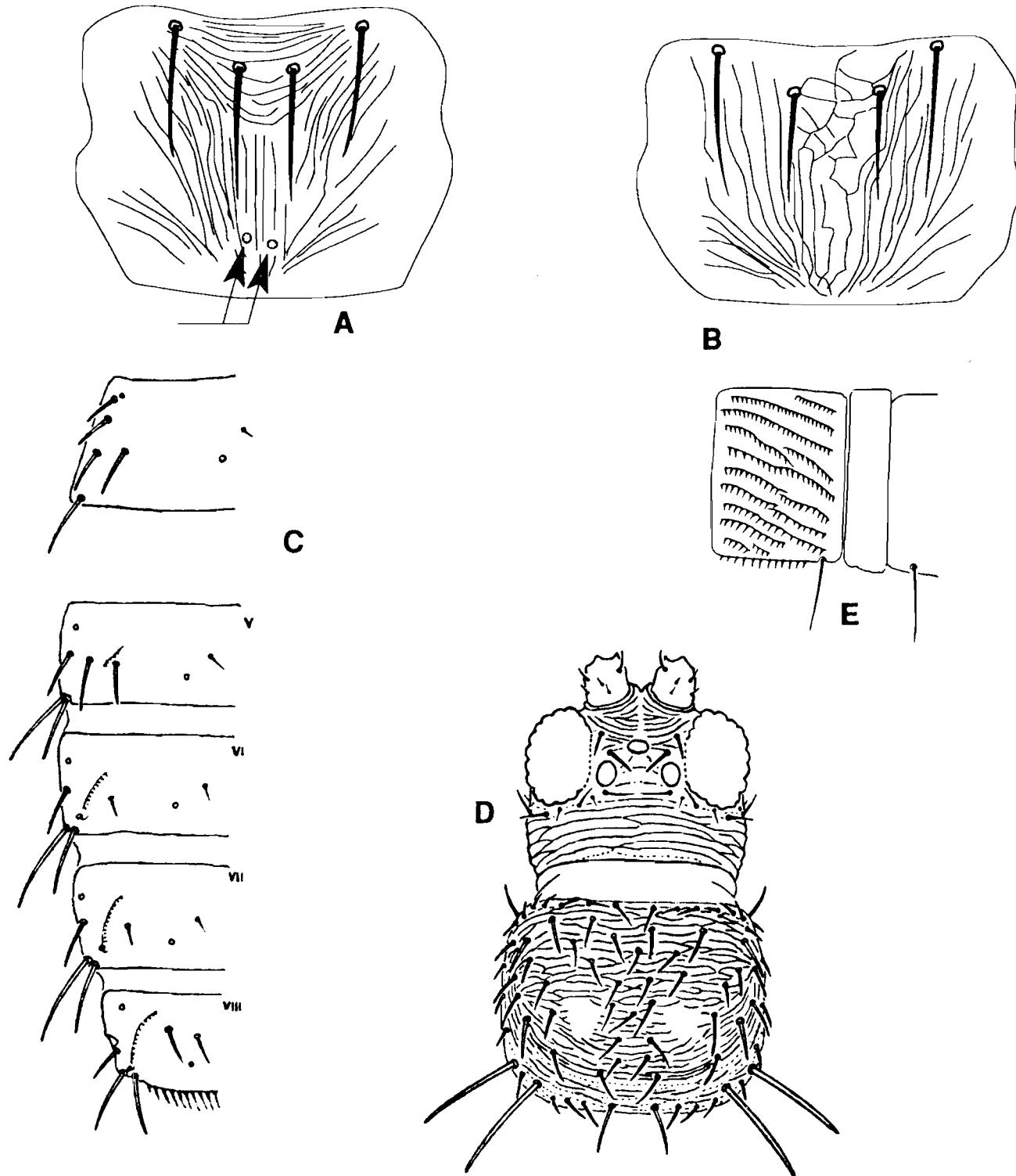
This thrips is easy to identify. See the following short description and illustrations of its distinguishing characteristics on page 76.

A THrips, *Psydrothrips* sp., -(Q)- This possibly serious thrips was recently found established in Hawaii. It is very similar to *P. kewi*, originally described in 1985 by Palmer and Mound from specimens in a glasshouse in Kew Gardens, Surrey, England, where it was causing severe damage to the leaves of several species of philodendrons (Araceae). At the time that *P. kewi* was described, specimens had also been found from Mexico and Brazil. According to Palmer and Mound, this species seems to be most closely related to other New World thrips with nine-segmented antennae including *Anaphothrips*, *Enneothrips*, *Pseudothrips* and *Psectrothrips*. They therefore conclude that the Kew specimens probably were introduced on philodendrons from Central or South America. The following generalized illustration of *Psydrothrips* on page 78 was patterned from the *P. kewi* description by Palmer and Mound ("New World Thripidae with nine-segmented antennae." 1985, Zoological Journal of the Linnean Society. 84:181-194).

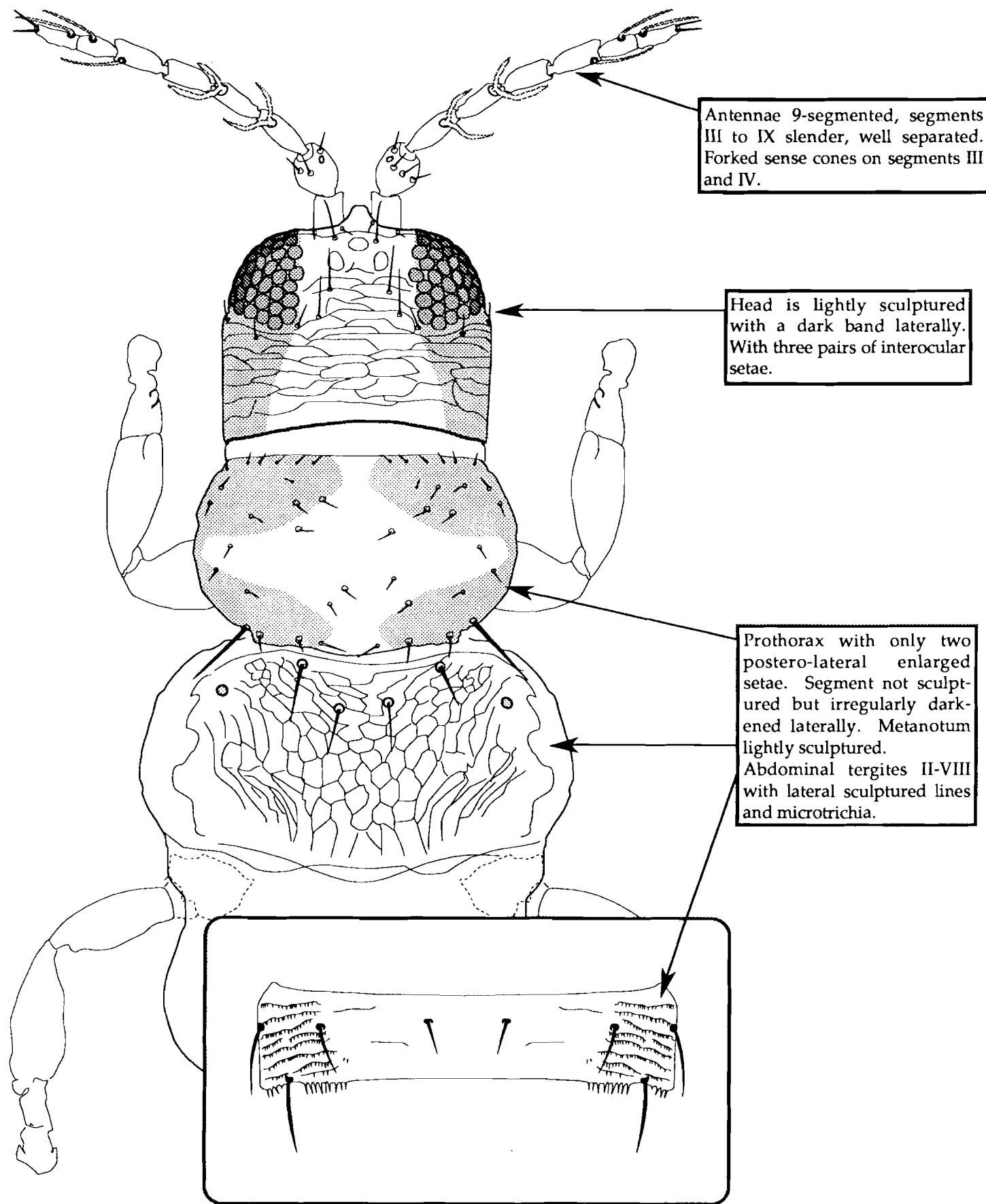
The new species in Hawaii also has nine-segmented antennae, and is bicolored with the sides of the head and thorax darker. The head and thorax are lightly reticulated. The antennae have a forked sense cone on segment III and IV. On the abdomen, there is a complete comb of microtrichia on the posterior edge of segment VIII, and the median tergal bristles are separated by a distance of twice their length. The original identification of this new thrips was made by Steve Nakahara, Systematic Entomology Laboratory, Beltsville.



An armored scale, *Andaspis punicae*. A. General shape of the adult female and male scale covers. B. Male and female scale covers showing burrowing habits with resulting cryptic appearance. C. Morphological outline of adult female. D. Morphological outline of adult female pygidium. From Rao, P.V. and G. F. Ferris, 1952, Microentomology 17(1):1-32.



Melon thrips, *Thrips palmi*, and comparison with onion thrips, *T. tabaci*. A. Dorsum of metathorax of *T. palmi* indicating pair of campaniform sensillae. B. Dorsum of metathorax of *T. tabaci* indicating absence of sensillae. C. Abdominal tergites of abdominal segments II and V-VIII of *T. palmi*. D. Head and thorax of *T. palmi*. E. Pleurotergite of *T. tabaci* showing rows of ciliate microtrichia (absent in *T. palmi*). Illustrations A, B, and E adapted from Palmer, Mound and 'du Heaume, CIE Guides to Insects of Importance to Man. 2. Thysanoptera, 1989. Illustrations C and D by K. Sakimura in Florida Department of Agriculture Entomology Circular #280, 1986.



Morphological schematic of *Psydrothrips*, indicating characters of importance in recognizing the genus.

**ASIAN GYPSY MOTH, *Lymantria dispar*, -(A)-** This potentially very serious threat to American forests has been causing a considerable amount of concern in the Pacific Northwest this fall. The problem seems to be associated with Russian ships visiting western Pacific ports in greater numbers this year, or ships of other flags visiting Russian ports before docking in North America. The following series of reports are excerpted from USDA, PPQ telemail reports to far west quarantine regulatory officials. These reports will explain the situation as it developed this fall, and it covers the course of action that has been taken to prevent introduction of this exotic strain of an already serious pest.

A male gypsy moth that was trapped in the State of Washington has been determined to be genetically similar to the Asian gypsy moth strain (AGM), based on mitochondrial DNA testing. Because this is a new procedure, we are not prepared to make a more definite statement on the identification at this time. However, actions are underway to deal with isolated gypsy moth infestations, realizing the Asian form could be present in these areas.

The Asian strain exhibits significant behavioral differences; and if established, could greatly complicate management of the pest in the United States.

These potential introductions are believed to have originated from numerous egg masses encountered on Soviet ships this past season at U.S. and Canadian ports.

The location of the trap was at Covington, Washington, between Tacoma and Seattle. This is the first record of this form of the gypsy moth being detected in the United States, although several have been trapped in the Vancouver, British Columbia, area. The insect was one of 22 moths trapped in Washington that have been submitted for identification to Dr. R. Harrison, a Cornell University cooperator. The test has been completed on nine of these, and DNA from only one matched that of the limited data available on referenced Asian forms. The DNA of the other eight matched that of the North American form.

U.S. and Canadian regulatory and forestry officials met during the week of October 15 in Vancouver, Canada. General parameters for regulatory, survey, and control actions were agreed upon; and a coordinating committee was established to pursue necessary actions. A meeting to coordinate the planning and execution of necessary research will occur in late November. APHIS has the lead on this issue for the United States and is working closely with the Forest Service and Canadian Government officials.

At this point, an update on Asian gypsy moth was sent to state and territory regulatory officials. Included with the update were a number of protocols that are being developed to prevent the future establishment of AGM in the New World.

As of December 6, four specimens trapped in Washington State have been identified by scientists at Cornell University as apparently an Asian strain of gypsy moth (GM). Cornell is using mitochondrial DNA procedures to identify these specimens. Several other specimens from Washington and Oregon are pending identification.

On December 5, headquarters representatives from the Forest Service (FS) and the Animal and Plant Health Inspection Service (APHIS) met to discuss the AGM situation. The following agreements were reached:

1. APHIS is the lead federal agency in AGM project activities;
2. The USDA'S Departmental policy for dealing with routine GM program matters has not changed; FS will remain as lead agency for the GM program;
3. Together, APHIS and FS will cooperate with state agencies in AGM project activities;
4. If treatments are needed, AGM eradication may be planned under an Environmental Assessment tiered to the present GM Environmental Impact Statement;
5. APHIS will appoint a regional project director and the FS will appoint a regional project person to coordinate local AGM activities between federal and state agencies in the western states; and
6. The present Memorandum of Understanding (MOU) between APHIS and FS does not cover the AGM project activities; the MOU may be amended in the future as needed.

APHIS has made arrangements with Cornell University to have all AGM suspect specimens identified before December 20. APHIS is also working to develop in-house AGM identification capabilities. Proposed ship boarding guidelines have been developed by APHIS for ships arriving from AGM infested areas. APHIS is developing survey plans for ports of entry, as well as delimiting surveys for possible infestations. APHIS is also coordinating similar AGM activities with Agriculture Canada.

#### **Gypsy Moth—Asian Strain (AGM)**

PPQ has requested information on AGM pest risk from all maritime ports. This information will be used to design an AGM port-of-entry detection survey for 1992. We are also working with our state cooperators to develop cooperative high-density AGM surveys for 1992 in Washington and Oregon.

#### **SUBJECT: Vessel Inspection Guidelines—Asian Gypsy Moth (*Lymantria dispar*)**

##### **Pest Characteristics:**

The Asian gypsy moth (AGM) is potentially more dangerous than European gypsy moth because it is likely to spread more rapidly. It has a powerful natural dispersal stage, the flying female adults. The females are often attracted to lights and are capable of flying up to 40 km. AGM larvae are able to feed on the foliage of certain conifers as well as hardwoods.

Recent reports from Vancouver, British Columbia, cite findings on the vessel superstructure of hundreds of egg masses and hatching larvae which are capable of "ballooning" (being blown by the wind on silk strands) from the vessel.

### **Canadian Experience with AGM in 1991:**

We have been informed by Agriculture Canada, Plant Protection Division, that at least ten vessels have been found infested with AGM. These vessels were required to immediately leave Canadian waters and were not allowed to return to Canada until October 16, 1991. Agriculture Canada (AC) believes that the egg masses found on the above listed vessels should have hatched before October 16.

### **Industry Contacts:**

APHIS and AC have communicated with shipping interests and asked that they not charter ships that called at Russian Far East ports during July, August, or September for voyages that would put the vessels in U.S. or Canadian ports during April, May, June, and July of the following year. We have stated if any vessel that did arrive during that time is found infested, the vessel will be ordered to leave U.S. waters immediately. APHIS has clearly stated to industry that although we currently have no regulation that prohibits the entry of these ships, we do have the authority under the Plant Pest Act and Plant Pest Regulations to order infested vessels to depart and to issue interim emergency regulations if compliance is not achieved voluntarily.

Industry groups have expressed a need, in some instances, to have vessel inspections occur before extensive movement in coastal and inland waterways.

Because this is an extraordinary situation, we have agreed to evaluate such requests on a location-by-location basis. Industry representatives need to make a specific proposal, in writing to Port Operations. Port Operations will ask the region involved to evaluate each request based on pest risk and safety factors. It is understood that agreeing to such arrangements may be difficult from a resource standpoint. However, given the high priority of this activity and the possibility of mitigating pest risk, every effort should be made to accommodate reasonable requests.

### **High Risk Asian Gypsy Moth Vessels:**

We have purchased from Lloyds of London data for vessel itineraries which include a range of Russian Far East ports from Posyet to Nikolayevsk including Vladivostok, Nakhodka, and Vostochniy. All interceptions of AGM by Canada and the United States have been on vessels with these ports in their itineraries. As we have no extensive experience in the United States with AGM, it is not known with certainty if these ports are the only ports where infestation of the vessel is likely to occur, but we know of no infested vessels from other Asian ports. Clearly, Canada has established that vessels arriving from Vladivostok, Nakhodka, and Vostochniy are high risk. Thus, Port Operations has provided electronically to each PPQ region a list of vessels which have the above referenced Russian ports in their itinerary during the critical period. The list

should be used as an alert list. The data are the most complete and reliable available but may not be all inclusive. Vessels could arrive at your port which are not on the list but were, in fact, at a Russian Far East port(s). It is suggested that port personnel focus attention on all bulk carriers arriving at their port and determine the vessel's itinerary. Obviously, if the unlisted vessel has been in a Russian Far East port, the vessel would be treated as if it were on the list and boarded on arrival.

### **Vessel Exclusion**

Vessels which were in the Russian Far East during the months of July, August, and September of the previous year should not enter the Continental United States including Alaska during the months of April, May, June, and July of the following year. For example, if a vessel loaded cargo or berthed in the above referenced Russian Far East ports during July 1991, the vessel should not enter into any Continental U.S. port including Alaska during the months of April, May, June, and July 1992.

**RATIONALE:** Asian gypsy moths are in the adult stage during July-September and the risk of egg mass deposition on vessels is greatest during those months. The adult female Asian gypsy moth, unlike its European biotype, is capable of flying great distances and is attracted to light. The majority of the egg masses hatch the following year in April, May, June, and July.

Canadian experience has shown that vessels with hundreds of hatching egg masses with "ballooning larvae" have arrived in Canadian ports under the preceding circumstances. Canada has also concluded that the risk of introducing AGM in this situation is unacceptable and Canada will prohibit vessel arrivals during the same period of the year.

**NOTE:** PPQ is concerned that there may be some risk of vessels with hatching larvae arriving at Continental southern ports during fall or winter months. If experience shows that this situation occurs, PPQ may further limit vessel arrivals in southern ports. Southern ports for the purpose of these guidelines are all ports south of Baltimore, MD, including Gulf and west coast ports which are south of and including San Francisco.

Hawaii, Puerto Rico, and Guam are exempt from the vessel exclusion policy. Vessels from the Russian Far East ports will be allowed to arrive throughout the year in Hawaii, Puerto Rico, and Guam. However, all vessels will be subject to inspection upon arrival.

**RATIONALE:** The AGM can not become established in a tropical climate because of the nature of host plants available and high temperatures.

### **Vessels Which Arrive at a United States Port Outside the Exclusion Period:**

Vessels which were in Russian Far East ports during the period of July - September 30 and arrive in the United States during the months of January, February, March, August, September, October, November, and December will be boarded on arrival.

**Vessel Inspection:**

Canadian and the United States experience has shown that egg masses are the most likely life stage to be found on the superstructure of the vessel. At certain periods of the year, hatching larvae are found.

Vessels found to contain hatching egg masses will be required to immediately leave the U.S. port. Also, the boarding PPQ Officer may require drenching of the egg masses with 50 percent solution of pine scent and water, 100 percent solution of liquid floor wax or 100 percent "Top Job" detergent or 50 percent solution of "Top Job" detergent and water solution. Non-hatching egg masses may be removed from the vessel under the direction of a PPQ Officer after the egg mass has been drenched with one of the foregoing non-toxic products. The egg masses removed from the vessel must be collected in a container and removed for destruction from the vessel only by a PPQ employee. No life stage of the AGM may be given to the ships crew, agent, or any other person.

Vessels found infested should be considered as a serious high risk situation and shall be kept under constant surveillance until the risk is eliminated or the vessel leaves the U.S. Continental or Alaskan port.

**Notification of Vessels Inspection:**

Port Operations will notify Canada of all vessels found infested in the United States. Canada in turn has agreed to notify the United States of vessels found infested in Canada. The communication mechanism will be Port Operations (Hyattsville) to Import Operations (Ottawa). This procedure will reduce the chances of a vessel departing and going to the other country to escape the requirements of the country which found the infestation. These guidelines become effective upon receipt.

**AFRICANIZED HONEY BEE, *Apis mellifera scutellata*, -(Q)-** Africanized bees have been trapped regularly in south Texas throughout the year. The following USDA, APHIS report covers some of the finds this fall:

On Tuesday, December 10, a swarm of Africanized honey bees (AHB) was captured, killed, and sampled in Victoria, Texas. Honey bees were seen near a railroad car by a railroad employee who called a local beekeeper. The beekeeper contacted the local PPQ Officer and together with a local health official and a fireman went to the scene and found a small swarm on the side of a tanker car filled with molasses. The fireman killed the swarm with a soap-water solution and the PPQ Officer took a sample of the honey bees. The sample was sent to the Agricultural Research Service (ARS) Honey Bee Laboratory in Beltsville, Maryland. The sample was identified on December 13 as AHB with evidence of European introgression. The railroad tanker car is believed to have come from a sugar mill near Harlingen, Texas. It is assumed that the swarm contained a queen, but a queen was not recovered.

Also, on Tuesday, December 10, a woman trimming ornamental plants at Edinburg, Texas, was stung 80 times by honey bees. Her father-in-law was stung 50 times and her mother-in-law was also stung several times. A dog, which was tied nearby, was killed by the honey bees. The local fire department killed the bees and provided samples to the Texas A&M Honey Bee Laboratory at Weslaco. Specimens were forwarded to ARS for final identification. The specimens were identified as AHB on December 13 at the ARS laboratory.

As of November 30, 359 swarms of AHB have been trapped and destroyed in south Texas by agencies cooperating in the survey effort.

## BORDER STATIONS

The border stations have a long history of being part of California's first line of defense against the introduction and establishment of exotic pest species. The speed and volume of air traffic has greatly increased the importance of the passenger baggage and air cargo pest entry pathways, but it is still amazing how many vehicles actually cross the borders each year. The following report by Dick Brown of the CDFA Exclusion Branch outlines the just such a record of vehicle movement for 1991 and its impact on the California quarantine system:

### THE BUSIEST STATIONS - An analysis of the Fiscal Year 1990/91 data revealed the following interesting information.

Statewide, a total of 26,771,030 vehicles, which equals 73,345 vehicles/day or 3,056 vehicles/hour, were handled by the personnel at the sixteen border stations. Trucks totaled 3,604,262, which equals 9,875 trucks/day or 411 trucks/hour. Quarantine rejections totaled 104,018, which equals 285 rejections/day or 11.9 rejections/hour.

A total of 5,189 pests (insects, nematodes, pathogens, weed seeds, and animals) were taken at the sixteen border stations, which averages 14.2/day every day of the year.

The most total traffic entered California through the Truckee Station which averaged 13,520 vehicles/day which equals 563 vehicles/hour.

The Blythe Station handled the most trucks, averaging 3,941 trucks/day which equals 164 trucks/hour.

The Hornbrook Station recorded the most quarantine rejections at 81.9 rejections/day which equals 3.4 rejections/hour.

The most pests were taken, and/or submitted for confirmation, from the Needles Station, which totaled 986 or an average of 2.7 pests/day.

All of the foregoing averages are based on a 24-hour day, and a 365 day year.

Gypsy moth has always been a pest of major concern to California. To recognize the efforts of the border station personnel who discover and destroy incoming gypsy moth life stages, the GYPSY MOTHers CLUB was established as a way to officially present awards for a job well done. Unfortunately, the current budget crisis will be impacting the program in the near future. The following report by Dick Brown tells the story:

It has been decided to terminate the GYPSY MOTHers CLUB. Certificates will be awarded for Calendar Year 1991, but unfortunately, there will be no money to purchase pins. Historically, this club was started in 1982, when recognition for individual inspectors who made personal gypsy moth interceptions was recorded and published in the Weekly Report. In 1983, the special award pin was created to be presented to each

inspector who made five or more personal interceptions in a calendar year. Since that time, approximately 200 pins have been purchased and presented. Congratulations to each and every inspector who won their awards by perennially contributing to the goal of preventing this pest from becoming established in California. Well done.

Part of the problem of enforcing a quarantine is that many people do not understand the consequences involved with the movement of uncertified plant material. Some are even inclined to try to circumvent the law when asked to declare such material. The following accounts of a border station quarantine inspector at work illustrates several situations that exemplify such problems:

Long Valley PQI Jack Doyle just had "a gut feeling" about the California RV that pulled into the inspection lane. The driver stated, "Just from Arizona," but Jack inspected the refrigerator anyway. He found Florida limes and a bag marked New England apples. Checking the stowage compartments, he found oak, elm and other firewood, allegedly from Palm Springs.

Jack continued to question the driver about the origin of the material. Finally, the owners reluctantly admitted to spending the summer in Maine. Jack then began inspecting the RV for gypsy moth and found a viable egg mass on the chassis. Then, under a hubcap, he found and the laboratory confirmed all lifestages of the gypsy moth.

Before leaving in their cleaned RV, the couple shook hands all around, apologized to Jack for attempting to mislead him, and stated their appreciation for the thorough inspection job that had been accomplished. Certainly, their consciousness had been raised about the importance of our pest exclusion work. Well done.

Later:

Long Valley PQI Jack Doyle did it again. He encountered a couple in a California licensed RV who indicated that they had just been on a "little trip." After more questioning, it was determined that the "little trip" had been to the East Coast and back.

Yes, they had picked up a "few souvenirs" along the way. Among their souvenirs, Jack discovered unshucked walnuts, home grown apples (from two states), and hickory nuts. Inspection of these items yielded no less than five serious pests, including apple maggot, walnut husk maggot, hickory shuckworm, and pecan weevil. How about that! Jack has again demonstrated that when the right questions are asked some very interesting things are found. Well done, again.

## PLANT PATHOLOGY HIGHLIGHTS

### NEW STATE RECORDS

CHRYSANTHEMUM WHITE RUST, *Puccinia horiana*, -(A)- This serious disease of chrysanthemums (CWR) was found in Oregon and Washington last year [see CPPDR 9(5-6):175]. The following report indicates the outcome of that eradication program:

PPQ SUCCESS STORY: The infestation of chrysanthemum white rust disease that was first detected in the Portland, Oregon, area in September 1990 has been eradicated. The infestation included one property in Oregon and two properties in an adjacent part of Washington. The eradication program was a cooperative effort involving the establishment of state quarantines to prevent the spread of the disease, conducting extensive surveys to determine if the disease had spread to additional locations, and carrying out control measures to ensure that all possible sources of infection were destroyed. The state quarantines have now been revoked and no additional state or APHIS activities are planned.

The disease was just declared eradicated in those states when it was found in Carpinteria, **Santa Barbara** County, California. The following accounts excerpted from Pest Exclusion Advisories by Dave Lüscher and Dorothea Zadig outline the details of the original find and subsequent surveys:

Santa Barbara County Plant Pathologist Heather Vallier submitted a chrysanthemum sample from a greenhouse in Carpinteria which has been positively identified as *Puccinia horiana* by the CDFA Associate Plant Pathologist Tim Tidwell.

The USDA has been notified of this find. Santa Barbara County and CDFA staff are working with the affected nursery to determine the source of the infected plant material as well as completing the survey of other nurseries in the area.

Eventually four chrysanthemum nurseries in the Carpinteria area of Santa Barbara County were found positive for CWR. Three of the nurseries produce cut flowers; the fourth nursery is a producer of potted plants. All four nurseries have been placed under a hold order and survey efforts are continuing.

The chrysanthemums found to be infected are the cut flower varieties 'Wall Street', 'Money Maker', 'Klondike', 'Dolly', 'California Pink Spider', 'Yellow Spider' and 'White Spider.'

Symptoms of *Puccinia horiana* are pale green to yellow spots, up to 4 mm in diameter, developing on the upper surface of leaves. With age, the centers of the spots turn brown and become necrotic. Telia form on the undersides of leaves, appearing first as buff to pinkish, waxy pustules, 2 to 4 mm across. These pustules become prominent, and with

the production of basidiospores, become whitish. While infection is most common on leaves, it can occur on any green portion of the plant (stem, bracts, crown, etc.), and also on petals. Infected leaves will often wither, and when infection is severe, the entire crop may be lost.

The four nurseries have been under quarantine hold since suspect disease samples were first gathered and sent to the Analysis and Identification Branch for diagnosis. All four nurseries have entered into compliance agreements with the cooperating agencies for eradication of the disease from their operations.

Intensive surveys of these nurseries have been completed. Of the cut flower producers, one nursery was found to have a heavily infected greenhouse, one was found to have a moderately infected greenhouse, and one a lightly infected greenhouse. The potted plant producer was found to have two greenhouses infected, one with a moderate and the other with a light level of infection.

The suppliers of the four nurseries found positive have also undergone intensive surveys of their facilities both in California and in other states and have been found negative for chrysanthemum white rust.

Chrysanthemum white rust was confirmed from cut flowers taken from a nursery dealer at the Los Angeles Wholesale Flower Market. Los Angeles County Inspector Mario Wu, surveying cutflower wholesalers, found a light infestation on two cut flower stocks (two leaves). The flowers were found to be from the Carpinteria area and were shipped prior to the discovery of chrysanthemum white rust at the nurseries. The rust was preliminarily identified by Los Angeles County Plant Pathologist Eric Hansen. It was subsequently confirmed by CDFA Plant Pathologist Tim Tidwell.

This wholesaler buys his chrysanthemums from three nurseries in Carpinteria; two of those nurseries are known to be infected with CWR. Los Angeles County staff returned to the Flower Market and conducted a more intensive survey but no additional infected specimens were located. An additional survey of the Flower Market is planned for the near future. Los Angeles County and CDFA staff are currently surveying all chrysanthemum growers within the county; no infected locations have been discovered to date.

Because this pathogen may have already spread to other susceptible areas, particularly in Southern California, through the movement of infected chrysanthemum nursery stock, these counties are urged to encourage their staff, as they perform their routine field duties, to quickly inspect any mums they may incidentally notice.

A special local need registration has been issued for the use of propiconazole (Banner) on greenhouse-grown chrysanthemums in Santa Barbara County. Recent studies show propiconazole to be the most effective chemical treatment tested in eradication efforts for chrysanthemum white rust.

HAINESIA LEAF SPOT, *Hainesia lythri*—Strawberry plantings from a Siskiyou County nursery were tested and diagnosed with Hainesia leaf spot fungal disease, constituting a new county record. D. Opgenorth and J. White from Analysis and Identification have also previously identified the fungus from Shasta County field plantings in fall of 1991 [see CPPDR 10(1-2):27].

## BOTANY HIGHLIGHTS

SPOTTED KNAPWEED, *Centaurea maculosa*, -(A)- Spotted knapweed has been found for the first time in **Alameda** County. The map on the following page shows the current California distribution. CDFA Botanist Doug Barbe prepared this report:

A new infestation of spotted knapweed has been found on the edge of the eastbound I-580 freeway in the Dublin Canyon west of Dublin in Alameda County. The size of the infestation is not known.

SKELETONWEED, *Chondrilla juncea*, -(A)- Skeletonweed has been found in **Monterey** and **Fresno** counties. The map on page 92 shows the current California distribution. The two new finds are outlined by Doug Barbe:

The find in Monterey County was made by CDFA Associate Agricultural Biologist Denis Griffin and Monterey County biologist Brad Oliver on October 17. The infestation is located on Southern Pacific Railroad property near Bradley.

Also in October, an infestation was brought to Fresno County's attention by a private pest control operator and sampled by Fresno County biologist Jermone Dunnichiff.

This infestation was found on the east side of Cedar Avenue between Florence and California Avenues in Fresno. This is approximately two miles southeast of the nearest previous infestation on Van Ness Avenue, Fresno.

DALMATIAN TOADFLAX, *Linaria dalmatica*, -(A)- There is a new county record for Dalmatian toadflax on Highway 41 near Oakhurst in **Madera** County. For the current California distribution, see the map on page 93. The following report was generated by Doug Barbe:

In September, 1991, Dalmatian toadflax was found for the first time in Madera County by Monterey County agricultural inspectors Carol Massetti and Bruce Rohn.

The infestation is approximately 32 air miles east northeast of the nearest previously recorded location, which is in Merced County, along the Santa Fe right-of-way, 100 yards south of Bucannon Hollow Road to the county line (Chowchilla River) in Townships 8 and 9 S, Range 16 E, MDB&M.

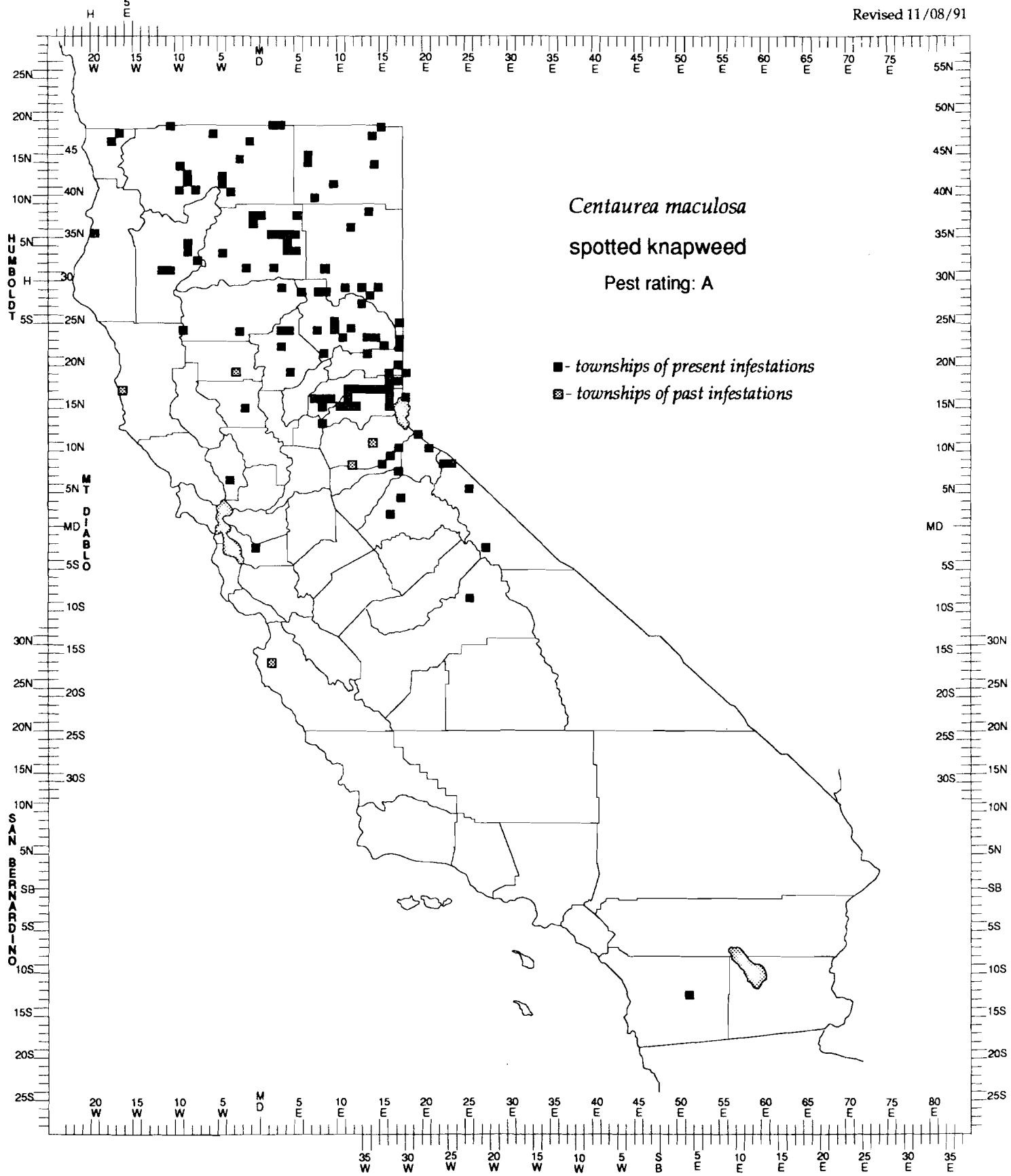
# STATE OF CALIFORNIA • DEPARTMENT OF FOOD AND AGRICULTURE

## DIVISION OF PLANT INDUSTRY - ANALYSIS & IDENTIFICATION/BOTANY

DETECTION MANUAL

D. T. 6:22a

Revised 11/08/91



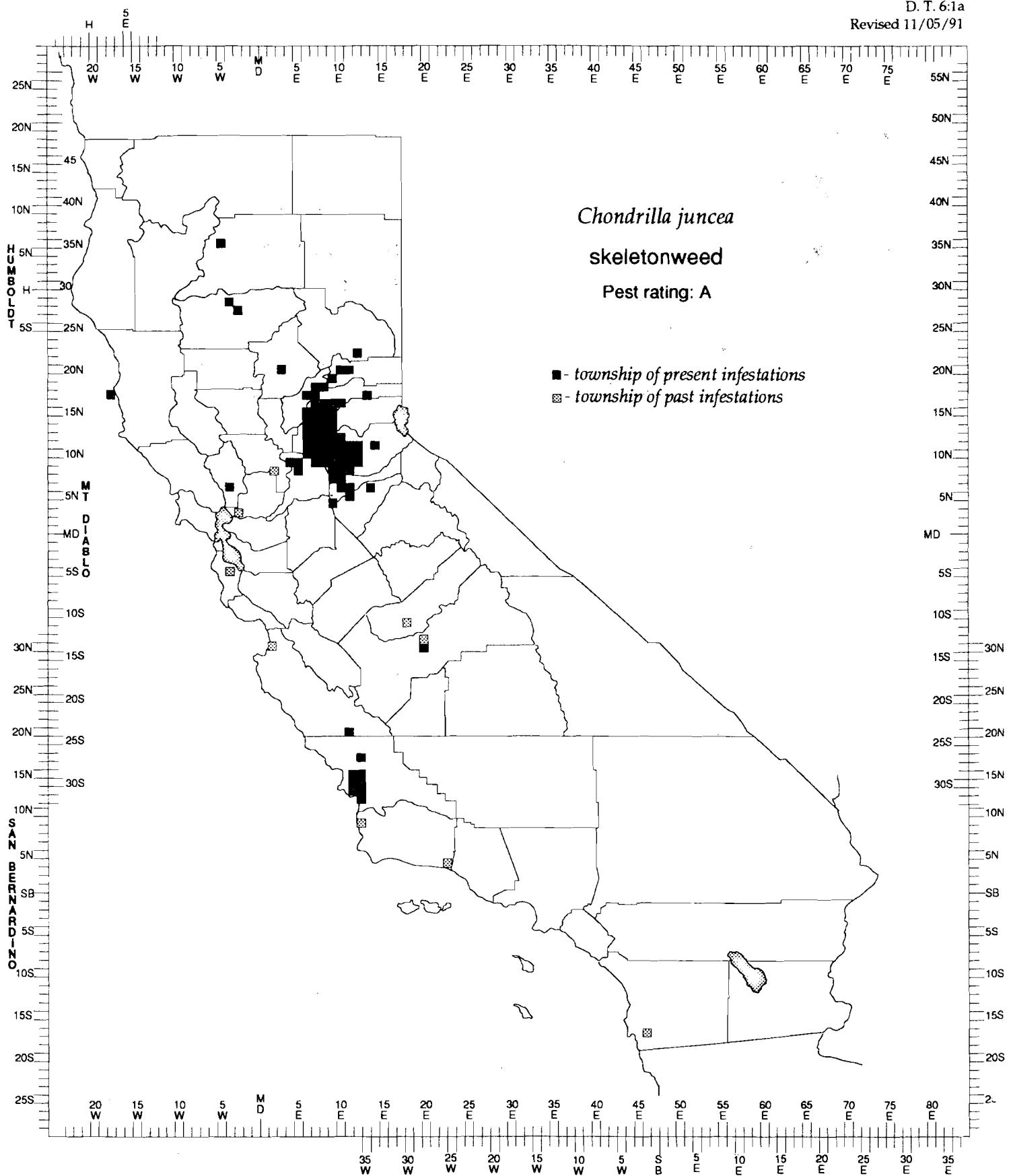
*92*  
STATE OF CALIFORNIA • DEPARTMENT OF FOOD AND AGRICULTURE

DIVISION OF PLANT INDUSTRY - ANALYSIS & IDENTIFICATION/BOTANY

DETECTION MANUAL

D. T. 6:1a

Revised 11/05/91



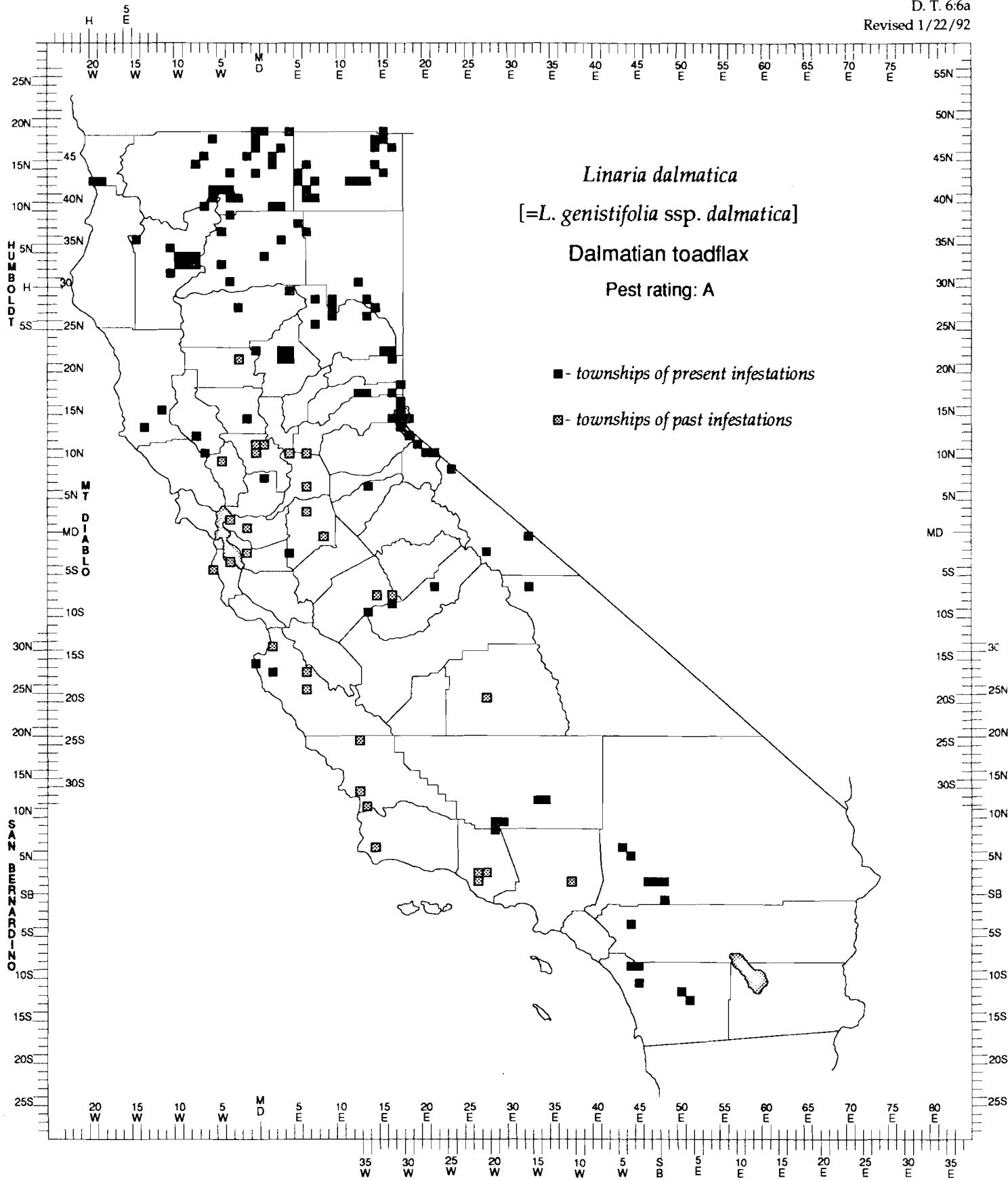
# STATE OF CALIFORNIA • DEPARTMENT OF FOOD AND AGRICULTURE

## DIVISION OF PLANT INDUSTRY - ANALYSIS & IDENTIFICATION/BOTANY

### DETECTION MANUAL

D. T. 6.6a

Revised 1/22/92



# Cumulative Index for the CPPDR, January, 1982 to December, 1991

The following index was compiled with much diligence by Stan Kuba and Lily Mallare. Many thanks go to them for their hours and days of work in completing this monumental task. Limited numbers of back issue copies are available from the editor on request.

- Abies* spp., 3(4):69  
*Acacia armata*, 9(3-4):74  
*Acacia baileyana*, 6(1):7, 9(3-4):137  
*Acacia decurrens*, 9(3-4):137  
*Acacia melanoxylon*, 8(1-2):32  
*Acacia podalyriæfolia*, 6(1):7  
acacia psyllid, 3(5):119, 5(3):226, 6(1):6  
acacia scorch, 8(1-2):32  
*Acacia* sp., 2(1):10  
acacia trees, 6(1):6  
*Acaena novae-zelandiae*, 9(1-2):4  
*Acalitus calycoptphthirus*, 3(5):103, 119, 122  
*Acalitus rudis*, 3(2):37, 3(5):122  
*Acarapis woodi*, 3(6):131, 133, 4(1):18, 4(2):53, 4(5):170, 5(1):201, 5(6):288, 6(1):4, 6(3):33, 10(5-6):67  
acarid mite, 1(4):40, 1(6):67, 3(6):131, 133, 4(1):18, 4(2):53, 4(5):170, 5(1):201, 5(6):288  
acarine mite, 10(5-6):67  
*Acarus farris*, 2(5):146  
*Acarus siro*, 2(5):146  
*Acer macrophyllum*, 9(3-4):137  
*Acer palmatum*, 3(6):147  
*Acer rubrum*, 5(1):194  
*Acer* spp., 5(6):278  
*Achras* sp., 1(4):45  
*Achras zapota*, 5(3):221  
*Acizzia (Psylla) uncatoides*, 6(1):7, 8(3-4):39  
*Acizzia acaciae-baileyanae*, 6(1):6, 6(3):36, 8(1-2):3, 8(3-4):39, 9(1-2):62, 10(1-2):12  
acridid grasshopper, 2(6):175  
*Acrolophus* sp., 1(2):30  
*Acrosternum hilare*, 4(5):172, 5(5):262  
*Actinidia chinensis*, 1(2):18  
*Aculops fuchsiae*, 1(1):6, 1(4):46, 2(4):112  
*Aculus cornutus* syn., 4(1):19  
*Aculus fockeui*, 4(1):19  
acuminate scale, 1(6):76, 4(3):96  
*Acutaspis decorosa*, 5(1):203  
*Acythopeus curvirostris*, 4(5):170  
address change, 6(5):58  
*Adelges piceae*, 5(3):227  
*Adiantum* spp., 3(6):146  
*Adoretes sinica*, 1(1):5, 1(6):75, 3(5):126, 4(1):21  
*Aegilops cylindrica*, 8(3-4):75, 77  
*Aegilops ovata*, 9(3-4):76  
*Aegilops triuncialis*, 7(1-4):25, 30, 9(3-4):77  
*Aegle marmelos*, 5(3):221  
*Aeolus melillus*, 1(2):30  
*Aeschynomene rufidis*, 9(3-4):126  
*Aesculus californica*, 9(3-4):137  
*Aesculus carnea*, 9(3-4):137  
African pumpkin fly, 6(3):31  
African rue, 7(1-4):23  
Africanized honey bee, 3(6):133, 4(4):104, 7(5-6):100, 8(5-6):107, 9(1-2):67, 9(5-6):173, 10(1-2):18-19, 10(3-4):51  
*Afzelia* sp., 7(1-4):10, 8(1-2):15  
*Agallia barretti*, 9(3-4):137  
agave, 4(2):60  
*Aglaonema commutatum*, 1(4):47  
*Aglaonema* sp., 1(1):6, 1(6):61, 1(6):76, 77, 5(5):267  
*Agrobacterium radiobactor*, 4(2):40  
*Agrobacterium rhizogenes*, 4(2):41  
*Agrobacterium tumefaciens*, 4(2):39  
*Agropyron elongatum*, 5(1):206  
*Agropyron repens*, 9(3-4):78  
*Agrostis* spp., 4(3):70, 4(5):122  
*Agrotriticum* sp., 5(1):206  
airport blitz, 9(1-2):63-66  
airport blitz (2nd), 9(3-4):142-147  
alazon mealybug, 5(3):231, 5(6):290  
albizia tree, 5(3):225  
*Aleurocerus* sp., 1(6):77  
*Aleurodicus dispersus*, 4(4):111, 5(3):233, 5(5):270, 5(6):292  
*Aleuroglyphus ovatus*, 3(1):10  
*Aleurothrixus antidesmae*, 10(5-6):73, 74  
*Aleurothrixus floccosus*, 1(1):6, 1(4):47, 3(4):88, 6(1):8, 6(3):36, 9(5-6):161  
*Aleurothrixus nr. floccosus*, 5(3):231  
alfalfa, 1(4):50, 2(4):113, 4(4):112, 115, 5(3):230, 7(1-4):9  
*Alhagi maurorum*, 9(1-2):5, 9(3-4):127  
alkali grass, 7(1-4):9, 7(5-6):81  
*Allamanda* sp., 1(6):77  
alligatorweed, 8(5-6):109, 9(1-2):6  
*Allium paniculatum*, 9(3-4):79  
*Allium vineale*, 9(3-4):80  
almond, 2(1):11, 2(6):166, 4(4):110  
*Alnus glutinosa*, 5(3):225  
*Alnus rubra*, 6(3):55  
*Alpinia purpurata*, 1(2):30  
*Alternanthera philoxeroides*, 8(5-6):109, 9(1-2):6  
*Alternanthera* sp., 3(6):147  
*Amaranthus retroflexus*, 3(3):53, 4(2):56  
*Amaranthus* spp., 3(6):146  
*Amaurorhinus bewickianus*, 8(1-2):17  
*Ambrosia trifida*, 9(3-4):81  
American chestnut, 3(4):78  
American palm cixiid, 9(1-2):48  
*Anagyrus* sp., 4(3):89  
*Anaphothrips orchidiæ* syn., 3(6):146  
*Anasa armigera*, 1(4):47  
*Anastrepha fraterculus*, 6(1):14  
*Anastrepha ludens*, 1(1):5, 1(2):30, 1(6):76, 2(5):147, 2(8):164, 3(1):6, 3(2):28, 3(3):52, 4(2):52, 4(4):108, 5(1):201, 5(5):257, 5(6):286, 7(1-4):7, 7(5-6):77, 8(1-2):4, 8(5-6):96, 9(1-2):48, 66, 9(3-4):131, 135, 9(5-6):164, 10(3-4):38, 10(5-6):58, 62  
*Anastrepha obliqua*, 5(6):291, 6(1):14, 8(3-4):46, 8(5-6):101  
*Anastrepha serpentina*, 8(3-4):56  
*Anastrepha* sp., 1(6):76  
*Anastrepha striata*, 8(3-4):48, 10(5-6):59  
*Anastrepha suspensa*, 3(1):6, 3(2):27, 3(5):128  
*Andaspis punicae*, 10(5-6):74, 75  
Andrews, F.G., 1(2):18  
angoumois grain moth, 2(6):174  
angular leaf spot, 3(3):48

- annona, 8(3-4):48  
 annona seedborer, 10(3-4):49  
 annosus root rot, 6(3):55  
*Anomala obliqua*, 3(5):126  
*Anomala orientalis*, 2(5):151, 2(6):175, 3(5):126, 4(1):21, 5(3):233, 5(5):270  
*Anomala* sp., 2(5):151, 2(6):175  
*Anoplophora malasiaca*, 3(4):89  
 ant, 1(1):5, 1(2):30, 1(4):46, 1(6):78, 2(4):115, 2(6):175, 5(3):233, 5(6):292  
*Anthemis cotula*, 8(1-2):29  
*Anthonomus grandis*, 2(5):144, 2(6):168, 3(1):8, 3(2):28, 3(3):51, 3(5):117, 3(6):140, 4(1):17, 4(2):52, 5(1):201, 5(3):223, 5(5):261, 5(6):287, 7(5-6):99, 8(5-6):101, 10(5-6):66-67  
*Anthurium* spp., 1(2):30, 1(6):78, 3(6):146  
 ants, 6(1):2  
*Anuraphis elegans* syn., 3(3):53  
*Aonidiella aurantii*, 5(5):270  
*Aonidiella messingeri*, 2(5):145  
*Aonidiella taxus*, 2(5):145  
*Aophora* spp., 4(3):81  
*Aphelenchoides fragariae*, 4(1):1  
 aphid, 1(2):32, 2(5):130, 3(3):45, 3(4):90  
*Aphis coreopsis*, 2(5):130  
*Apis cerana*, 3(6):134  
 apis iridescent virus, 3(6):134  
*Apis mellifera*, 4(5):156  
*Apis mellifera scutellata*, 4(4):104, 4(5):154, 6(1):12, 7(5-6):100, 8(5-6):107, 9(1-2):67, 10(1-2):18-19, 10(5-6):83-84  
*Apis mellifera scutellata* hybrids, 10(3-4):51  
*Apis* spp., 3(6):133  
*Apogonia* sp., 1(2):30  
 apple, 1(1):13, 1(2):19, 2(1):11, 2(5):146, 2(6):166, 3(3):50, 4(5):154, 164, 168  
 apple ermine moth, 5(1):208  
 apple maggot, 1(1):5, 2(5):135, 2(6):166, 172, 3(1):7, 3(5):105, 112, 3(6):141, 5(3):222, 5(5):258, 5(5):265, 6(3):31, 35, 50, 8(5-6):109, 10(5-6):64  
 apple maggot, 9(3-4):131, 133, 136, 9(5-6):166, 178  
 apple maggot trap finds, 6(5):71, 7(5-6):78, 8(3-4):46  
 apples, 5(1):202  
 apricot, 2(6):166, 4(5):164  
*Aprostocetus* sp., 10(3-4):38, 42  
*Apterona crenulella*, 2(5):146, 4(4):114  
*Apterona helix*, 5(1):202  
*Araecerus fasciculatus*, 5(5):267  
*Araujia sericofera*, 9(3-4):82  
*Arbutus menziesii*, 10(1-2):14  
 arctiid moth, 1(4):46, 2(6):175  
*Arctotheca calendula*, 7(1-4):23, 9(1-2):7, 9(1-2):45  
 areca palm, 1(1):5, 6, 1(2):31, 1(4):47, 1(6):77, 2(4):115, 2(6):175, 3(3):52, 5(1):203, 5(3):230  
 Argentine ant, 1(4):49  
 Arizona fescue redondo, 7(1-4):9  
 armored scale, 5(3):230  
 arrowhead plant, 4(3):77  
 arrowhead scale, 3(1):16  
*Artemisia vulgaris*, 2(4):113  
 artichoke, 6(1):22  
 artichoke thistle, 9(3-4):95  
 ash, 6(1):11  
 ash psyllid, 6(1):9, 10(1-2):12  
 ash whitefly, 7(1-4):10, 7(5-6):80, 8(1-2):14, 8(5-6):104, 107, 9(1-2):59, 9(3-4):136, 154, 9(5-6):166-169, 10(1-2):12-13, 10(3-4):43, 10(5-6):68-69, 70  
 ash/lilac borer, 4(2):37, 58, 4(4):114  
 Asiatic garden beetle, 2(5):149, 151, 2(6):175, 3(5):126, 4(1):21  
 Asiatic red scale, 2(5):145  
 asparagus, 4(4):112, 5(5):266  
 asparagus aphid, 3(4):97, 3(6):142, 4(1):19, 4(4):114, 4(5):168, 5(3):226, 5(5):266, 5(6):290, 6(1):2  
*Asparagus macawania*, 3(6):142  
*Asparagus meleolooides*, 3(6):142  
*Asparagus myerii*, 3(6):142  
*Asparagus officinalis*, 3(6):142, 4(1):19  
*Asparagus plumosus*, 1(6):78  
*Asparagus sprengeri*, 3(6):142  
*Aspidiota destructor*, 1(4):47, 3(3):52, 5(6):292  
 aster, 2(4):113, 4(3):70, 4(4):112  
*Asterocanium*, 9(1-2):47  
*Asterolecanium arabidis*, 6(1):11  
*Asterolecanium bambusae*, 9(1-2):47  
*Asterolecanium pseudomiliaris*, 9(1-2):47  
*Asterolecanium robusta*, 9(1-2):47  
*Athrips rancidella*, 2(5):145  
*Athysanus schenckii* syn., 2(4):112  
 Australian bush cherry, 7(1-4):13  
 Australian seed beetle, 6(3):34  
 Australian sod fly, 5(5):266, 5(6):289, 6(1):9, 6(3):36, 10(5-6):67  
 Austrian fieldcress, 9(3-4):115  
 Austrian peaweed, 9(1-2):41  
*Avena* sp., 5(1):206  
 avocado, 1(6):62, 2(1):9, 2(6):166, 171, 4(4):111, 112, 8(3-4):48  
 avocado seed weevil, 7(5-6):83, 8(1-2):16  
 azalea bark scale, 5(3):230  
 azalea leaf gall, 4(5):120  
 baby's breath, 9(3-4):102  
 bachelor button, 1(6):63  
 bacterial leaf blight, 4(3):77  
 bacterial leaf spot magnolia, 1(6):71  
 bacterial rating list, 4(1):31  
*Bactrocera correctus*, 10(5-6):58  
*Bactrocera dorsalis*, 10(3-4):38, 10(5-6):59, 61-62, 73  
*Bactrocera tryoni*, 10(3-4):39  
 bael, 5(3):221  
 baggage inspection blitz, 9(3-4):147-151  
*baileyana* psyllid, 6(3):36, 8(1-2):3, 9(1-2):62, 10(1-2):12  
 Baker, E.W., 3(5):122  
*Balanococcus diminutus*, 10(1-2):3  
 balsam wooly aphid, 5(3):227  
 bamboo pit scale, 9(1-2):47  
*Bambusaspis bambusae*, 9(1-2):47  
*Bambusaspis pseudomiliaris*, 9(1-2):47  
*Bambusaspis robusta*, 9(1-2):47  
*Bambusaspis* spp., 9(1-2):47  
 banana, 4(5):164, 5(6):290, 5(3):231  
 banana waterlily, 9(3-4):109  
 barb goatgrass, 7(1-4):25, 30, 9(3-4):77  
 Barbe, Doug, 10(3-4):54  
 barley, 2(4):113, 2(5):146, 3(3):56, 4(3):85, 5(1):206, 7(1-4):9  
 barley stripe mosaic virus, 1(6):63  
 Barrentine, Carl D., 7(1-4):19  
 Barrett's leafhopper, 9(3-4):137  
 basal rot, 4(2):43  
 Basidiomycete fungi, 6(3):52  
 basil, 3(3):53, 4(2):57  
*Bauhinia mexicana*, 4(4):111  
 bean, 1(6):59, 1(6):63, 4(4):112, 3(3):53, 7(1-4):9  
 bean anthracnose, 1(6):63  
 bean thrips, 1(6):73  
 bean weevil, 6(5):6

- bearded creeper, 8(5-6):110, 9(1-2):18, 10(3-4):54,55  
*Beaucarnia* sp., 3(6):161  
bee-hive mite, 6(5):62  
beet, 2(4):113  
beet yellow stunt, 1(2):32  
*Begonia* spp., 3(6):146, 4(3):70  
bell pepper, 1(4):44, 1(6):65, 2(6):166, 3(3):53, 4(2):56, 4(4):112, 4(5):154  
Bell, T., 5(5):251  
*Bemisia tabaci*, 3(5):107, 10(3-4):33-37, 10(5-6):68,71  
Ben-Dov, Yair, 9(1-2):47  
bentgrass, 4(5):122  
*Bephratelloides* sp., 10(3-4):49,50  
Ber, 5(3):22  
Bermuda grass, 4(4):114, 6(1):8, 7(1-4):19  
*Betula pendula*, 3(5):122  
*Betula verrucosa* syn., 8(6):122  
Bezark, Larry G., 8(1-2):35  
biddy-biddy, 9(1-2):4  
bidens mottle virus, 2(5):130  
big headed ant, 1(1):5, 1(2):30, 1(4):46, 5(3):233, 5(5):270, 5(6):292  
big leaf maple, 9(3-4):137  
*Bignonia*, 8(3-4):58  
billbugs, 7(1-4):19  
*Bipalium adventitum*, 1(6):68  
*Bipalium kewense*, 1(6):68  
*Bipalium quadricinctum*, 1(6):70  
*Bipalium rauchi*, 1(6):70  
*Bipalium voighti*, 1(6):70  
birch, 3(5):122  
birch aphid, 3(2):37  
bird cherry-oat aphid, 8(3-4):39  
bird mite, 2(6):174  
bird of paradise, 2(4):115  
bird's eye spot, 4(4):117  
bird's nest fungi, 6(3):52  
bitter cherry, 2(1):9  
black acacia, 8(1-2):32  
black arm symptom, 3(3):48  
black cherry fruit fly, 2(1):9, 3(5):112, 5(5):260, 9(5-6):166  
black currant gall mite, 10(1-2):15-17  
black-headed ant, 1(2):30, 10(5-6):67  
black parlatoria scale, 5(1):209  
black pine, 6(1):11  
black sage, 4(2):57  
black scale, 2(6):171  
black spot disease, 4(3):77  
black-tipped thrips, 10(3-4):43,44,45  
blackberry, 4(5):164, 7(1-4):9  
blacklight trap report, 1(1):12,1(4):57, 1(6):78, 2(4):120, 2(5):158, 3(1):17, 3(2):42  
bladder flower, 9(3-4):82  
*Blastopsylla occidentalis*, 4(3):91, 10(3-4):47, 10(5-6):69  
*Blissus insularis*, 3(2):29, 4(4):114  
blossom blight of iris, 4(3):74  
blue grama, 7(1-4):9, 7(5-6):81  
blue gum psyllid, 10(1-2):5  
blue panicgrass, 9(3-4):110  
blueberry maggot, 3(5):128  
blueberry rust, 3(4):69  
bluegrass, 4(5):122  
bluegum psyllid, 10(3-4):38,43,47, 10(5-6):69,71  
blueweed, 9(1-2):25  
Boisduval scale, 1(4):45  
boll weevil, 7(5-6):99, 8(5-6):101  
*Bombus ionellus*, 3(3):56  
Bonells planthopper, 3(3):55, 4(4):114  
book review, 1(1):3, 1(2):33  
*Bootanellus* sp., 1(1):5  
Boratynski, T.N., 3(3):46  
border station interceptions, 1(1):7, 1(4):48, 1(6):79, 2(4):119, 2(5):156, 2(6):178, 3(1):15, 3(2):41, 3(3):62, 3(4):97, 3(5):129, 3(6):150, 4(1):26, 4(2):64, 4(3):93, 4(5):172, 5(1):215, 5(3):239, 5(5):275, 5(6):295, 10(3-4):52  
bostrichid beetle, 1(1):5, 8(3-4):59  
*Botryotinia convoluta*, 4(3):74  
*Botrytis cinerea*, 4(3):74  
botrytis crown rot, 4(3):74  
botrytis rhizome rot, 4(3):74  
bottle tree, 1(1):15  
bottlebrush, 8(1-2):16  
*Bougainvillea* spp., 3(6):146  
Bowen, Jeff, 6(5):67  
boxwood scale, 4(3):96  
*Brachycaudus rumexicolens*, 3(4):90  
*Brachychiton populneum*, 1(1):15  
*Brachycolus asparagi*, 3(4):97, 3(6):142, 4(1):19, 4(4):114, 4(5):168, 5(3):226, 5(5):266, 5(6):290  
*Brachycolus* syn., 6(1):2  
*Brachycorynella asparagi*, 6(1):2  
*Bradybaena similaris*, 1(1):6, 1(4):46, 1(6):77, 5(3):233, 5(5):270  
bran, 3(1):10, 7(1-4):15  
*Brassaia* sp., 2(4):115, 5(3):230  
Braun, A.L., 3(4):75  
Brazilian pepper tree, 3(5):119, 7(1-4):3  
Brisbane box tree, 3(2):30, 3(3):56, 3(6):144, 4(5):153, 6(3):39  
broadheaded sharpshooter, 4(5):166  
broccoli, 3(3):56  
bromegrass, 5(1):206  
bromeliad, 1(2):30, 1(6):77, 78, 2(4):112  
bromeliad mealybug, 5(3):231  
*Bromus madritensis*, 5(1):206  
*Bromus unioloidae*, 5(1):206  
bronze leaf beetle, 5(5):266  
brown rot, 1(2):19  
brown soft scale, 3(5):118  
brown speckled leafhopper, 9(1-2):48  
Brown, K., 3(2):34  
brown-ring disease, 4(1):1  
bruchid beetle, 1(2):30  
*Bruchidius trifolii*, 1(2):30  
*Bryophyllum* sp., 4(2):39  
*Bufo boreas*, 7(1-4):19  
*Bufo cognatus*, 7(1-4):19  
Bulletin of the, CDFA, 4(4):114  
*Buprestis aurulenta*, 1(6):60  
Burgess, Becky, 6(5):67  
bush bean, 4(4):112  
Buxton, G., 4(3):66  
CA Plant Disease Conference, 5(5):254  
cabbage, 1(6):63, 3(3):53  
cabbage butterfly, 1(2):33  
*Cacopsylla pyricola*, 5(3):219  
cactus, 3(4):89  
cactus mealybug, 9(1-2):47  
*Caladium* sp., 2(4):115  
calamondin tree, 6(1):11  
*Calathea* sp., 2(6):173  
California buckeye, 9(3-4):137  
California pepper tree, 3(5):119  
*Caliscelis bonellii*, 3(3):55, 4(4):114  
Callison, Bill L., 4(2):49  
*Callyntrous schelectendali*, 3(1):4  
*Caloglyphus mycophagus*, 3(2):34  
*Calophya rubra*, 7(1-4):3, 7(1-4):13  
*Calophya schini*, 3(5):119, 3(6):144, 4(4):114, 4(5):153, 4(5):168, 5(1):201, 5(3):229, 5(5):266, 6(3):36, 7(1-4):3  
camelthorn, 9(1-2):5, 9(3-4):127  
*Camponotus quercicola*, 5(3):229  
*Camponotus variegatus*, 9(3-4):154  
Canada thistle, 5(6):292, 7(1-4):25, 9(3-4):92

- canary grass, 7(1-4):9  
 caneberry, 1(6):76, 5(5):266  
 cannon-cup fungi, 6(3):52  
 cantaloupe, 2(5):133, 3(5):107  
 capeweed, 7(1-4):23, 9(1-2):7  
*Cardaria chalepensis*, 9(3-4):83  
*Cardaria draba*, 9(3-4):84  
*Cardaria pubescens*, 9(3-4):85  
*Carduus acanthoides*, 9(1-2):8  
*Carduus nutans*, 8(3-4):77, 9(1-2):9  
 Caribbean fruit fly, 3(1):6, 3(2):27,  
 3(5):128, 5(5):274, 6(5):82  
*Carissa carandas*, 5(3):221  
 carnation, 4(3):70  
 carob bean, 2(1):11  
 carob moth, 2(1):11, 2(4):111,  
 4(1):20, 6(1):10, 9(5-6):161  
 Carolina horsenettle, 9(3-4):120  
 carpenter ant, 5(3):229  
 carrion, 7(1-4):13  
 carrot, 1(6):63, 4(2):41  
 carrot rust fly, 3(3):58  
*Carthamus baeticus*, 9(3-4):86  
*Carthamus lanatus*, 9(3-4):87  
*Carthamus leucocaulos*, 9(1-2):10  
*Carya ovata*, 5(1):194  
*Carya* spp., 5(6):278  
 casaba melon, 3(5):107  
 cashew, 4(5):164  
*Castanea dentata*, 3(4):79  
*Castanea cranata*, 3(4):80, 5(1):193  
*Castanea mollissima*, 5(1):194, 3(4):79  
*Castanea sativa*, 3(4):79, 5(1):193  
*Castanea* spp., 5(6):278  
*Castanopsis chrysophylla*, 3(4):80  
*Castanopsis* spp., 5(1):194  
 castor bean, 5(3):221  
*Casuarina stricta*, 1(1):5  
*Catharanthus roseus*, 3(3):53  
 catmint, 4(2):57  
 catnip, 4(2):57, 5(3):228  
 cattle, 7(1-4):13  
 cattle feed, 3(1):10  
*Cattleya labiata*, 3(6):147  
 cauliflower, 3(3):56  
 cecidomyiid fly, 6(1):8  
*Cecidophyopsis ribis*, 10(1-2):15-17  
 celery, 2(4):113, 3(3):56  
 celery mosaic virus, 5(3):246  
*Celtis occidentalis*, 8(1-2):9  
*Centaurea calcitrapa*, 9(3-4):88  
*Centaurea diffusa*, 1(1):7, 1(2):31,  
 1(4):40, 1(6):67, 3(2):34, 7(1-  
 4):25, 29, 8(3-4):77, 9(1-2):11  
*Centaurea iberica*, 9(1-2):12  
*Centaurea maculosa*, 7(1-4):104, 9(1-  
 2):13, 9(3-4):127, 10(5-6):90, 91  
*Centaurea repens*, 9(3-4):89  
*Centaurea squarrosa*, 9(1-2):14  
*Centaurea sulphurea*, 9(3-4):90  
*Ceratitidis capitata*, 1(1):4, 2(1):8,  
 3(5):111, 4(1):15, 4(2):51,  
 4(3):79, 5(1):206, 5(5):256,  
 5(6):285, 6(3):30, 6(1):11,  
 6(3):40, 7(1-4):3, 7(5-6):75, 8(3-  
 4):39, 8(5-6):85, 108, 9(1-  
 2):48, 66, 9(3-4):130, 132, 9(5-  
 6):161, 10(1-2):17, 10(5-  
 6):59, 60, 73  
*Ceratophyllum demersum*, 7(1-4):24  
 cereal, 1(6):63  
 cereal leaf beetle, 8(5-6):108  
 cereal thrips, 6(1):11  
*Cerococcus citri*, 5(1):214  
*Ceroplastes floridensis*, 1(1):6,  
 1(2):31, 1(6):78, 5(1):203,  
 5(5):267  
*Ceroplastes rubens*, 1(1):6, 1(6):61,  
 1(6):77, 2(4):112, 5(3):230,  
 1(4):47, 5(3):231, 6(5):66, 9(3-  
 4):14  
*Ceroplastes sinensis*, 10(1-2):12  
*Chaetanaphothrips orchidii*, 3(6):146  
 chaff scale, 2(4):112  
 Chalcid wasp, 1(1):5, 1(6):78  
*Chamaedorea* sp., 1(6):77, 2(4):115,  
 4(4):111  
*Chamaedorea fragrans*, 3(6):146  
 cheatgrass, 7(1-4):9  
 cheese, 2(5):146  
*Chelymorpha cassidea*, 2(6):175  
 cherry, 6(3):50, 2(5):147, 3(5):112,  
 5(5):266  
 cherry bark tortrix, 9(5-6):170-172,  
 10(1-2):19-20, 10(3-4):51  
 cherry leaf spot, 3(5):104  
 cherry tomato, 4(5):154  
 chestnut bark disease, 5(1):193  
 chestnut blight, 3(4):78, 5(1):193,  
 5(6):276, 278  
 chestnut tree, 5(3):228  
 chicken meal, 3(1):10  
 chiku, 5(3):221  
*Chinchona* spp., 3(6):146  
 Chinese chestnut, 3(4):79, 5(1):194  
 Chinese pistachio trees, 6(1):11  
 Chinese rose beetle, 1(1):5, 1(6):75,  
 3(5):126, 4(1):21  
 Chinese wax scale, 5(3):231,  
 6(5):66, 10(1-2):12  
 Chinn, Tammy, 6(5):60  
*Chinquapin*, 3(4):80, 5(3):228  
 chives, 2(1):4  
*Chlorochroa* spp., 5(5):264  
*Chondrilla juncea*, 1(4):40, 1(6):67,  
 8(1-2):29, 8(5-6):110, 9(1-2):15,  
 9(3-4):127, 10(5-6):89, 91  
*Chorispora tenella*, 9(3-4):91  
*Choristoneura lambertiana*, 2(4):115  
*Choristoneura* sp., 2(6):175  
*Chorizococcus lounsburyi*, 9(1-2):47  
 Christmas tree, 2(5):128, 3(1):11  
 Christmas wreath, 6(1):11  
*Chrysalidocarpus lutescens*, 1(1):6,  
 1(2):31, 1(4):47, 1(6):76, 77  
*Chrysalidocarpus* sp., 2(4):115  
 chrysanthemum white rust, 9(3-  
 4):158, 9(5-6):175-176, 10(5-  
 6):87-88  
 chrysoma blow flies, 7(1-4):13  
*Chrysoma megacephala*, 7(1-4):13  
*Chrysoma rufifacies*, 7(1-4):13  
 Chrysomelid beetle, 2(6):175  
*Chrysophyllum*, 8(3-4):48  
*Chrysothamnus* sp., 4(3):82  
*Cibotium* spp., 3(4):71  
*Cirsium arvense*, 7(1-4):25, 9(3-4):92  
*Cirsium ochrocentrum*, 9(1-2):16,  
 9(3-4):127  
*Cirsium undulatum*, 9(1-2):17, 9(3-  
 4):129  
*Cissus mandarina*, 1(4):47  
*Citrofortunella mitis*, 6(1):11  
*Citrus*, 1(1):1, 2, 1(4):47, 1(6):62,  
 2(1):10, 2(4):112, 2(6):171,  
 3(3):50, 3(3):56, 3(6):144, 146,  
 4(3):85, 4(4):110, 111, 4(5):166,  
 5(1):209, 5(3):220, 226, 5(3):231,  
 6(1):8, 6(1):9, 8(1-2):15  
*Citrus aurantium*, 3(5):112  
 citrus canker, 4(5):124, 9(3-4):157,  
 9(5-6):177  
*Citrus hystrix*, 4(5):124  
 citrus mealybug, 1(1):1, 2  
*Citrus reticulata*, 1(4):47  
*Citrus sinensis*, 8(3-4):48  
*Citrus* spp., 4(2):53  
 citrus thrips, 5(5):267  
 citrus whitefly, 4(2):53  
*Cixiid* planthopper, 4(5):168,  
 6(5):65  
*Cladosporium macrocarpum*, 10(1-  
 2):25  
*Clastoptera arizonana*, 9(3-4):137  
*Clavisiphon* sp., 3(3):53  
 click beetle, 1(2):30  
 cloudywinged whitefly, 1(1):5,  
 4(2):53, 4(3):85, 4(5):168, 5(3):  
 226  
 clustering disease, 3(6):134  
 coast live oak, 6(3):56

- Coccinella septempunctata*, 10(1-2):12,14  
*Cocomyces hiemalis*, 3(5):104  
*Coccotrypes carpophagus*, 6(3):35  
*Coccotrypes dactyloperda*, 6(3):34  
*Coccotrypes rutshuruensis*, 6(3):34  
*Coccus viridis*, 4(3):96, 5(3):233, 5(5):270, 5(6):292  
 coconut, 1(1):5,6  
 coconut scale, 1(4):47, 3(3):52, 5(6):292  
*Cocos nucifera*, 1(2):31, 1(4):47, 1(6):76  
*Coffeae arabica*, 10(5-6):72  
 coffee, 2(1):10  
 coffee bean weevil, 5(5):267  
*Coleus* sp., 3(3):53, 1(1):2  
*Colletotrichum acutatum*, 8(5-6):114  
 Columbia root-knot nematode, 3(6):161  
*Commelina nudiflora*, 3(6):146  
 common names, 1(4):51  
 common scab, 3(6):136  
 Compendium of Rose Diseases, 2(4):126  
 composted vegetable matter, 7(1-4):15  
 computer database, 1(4):38, 2(6):179  
 computer program, 3(3):49  
 Comstock mealybug, 6(1):9, 8(3-4):58  
 conifer, 1(6):60  
 conifer diagnoses, 4(1):8, 4(5):126  
*Conotrachelus nenuphar*, 2(5):147  
 cootamundra wattle psyllid, 6(3):36  
*Coprosma* sp., 2(1):10  
*Coptotermes formosanus*, 9(3-4):154  
*Cordilura* sp., 1(6):76  
 cork oak, 3(4):90  
 corky ringspot, 4(5):118, 3(2):26  
 corn, 1(1):5, 2(5):127, 7(1-4):9, 7(1-4):15  
 corn earworm, 10(1-2):3  
 corn smut, 2(1):1,2  
 corn thrips, 8(5-6):85  
*Coronopus squamatus*, 9(3-4):93  
*Corticium fuciforme*, 4(5):122  
*Corylus sieboldiana*, 2(4):108  
*Cotoneaster* spp., 1(1):13, 2(5):145  
 cotton, 3(3):48, 3(6):142, 7(1-4):9  
 cotton boll weevil, 5(3):223, 2(5):144, 2(6):169, 3(1):8, 3(2):28, 3(3):51, 10(5-6):66-67  
*Cotula* spp., 4(3):70  
 covered kernel smut, 2(6):180  
 Cox, Jennifer, 9(1-2):47  
 cranberry, 2(1):10, 3(4):69  
*Crataegus douglassi*, 9(3-4):137  
*Crataegus mollis*, 7(1-4):11, 8(1-2):15  
*Crataegus monogyna*, 7(1-4):11, 8(1-2):15  
*Crataegus oxyacantha*, 7(1-4):11, 8(1-2):15  
 creeping mesquite, 9(1-2):34  
 crenshaw melon, 3(5):107  
 creosotebush spider mite, 8(3-4):39  
 crepe myrtle, 5(6):290  
*Criconemella* spp., 1(2):33  
*Croton* sp., 1(4):47  
 crown gall, 4(2):39  
*Cruibulum* spp., 6(3):53  
*Crupina vulgaris*, 8(5-6):110, 9(1-2):18, 10(3-4):54,55  
 crustywaxed whitefly, 4(4):111  
*Cryptolaemus* sp., 1(1):2  
*Cryptoripersia trichura*, 4(3):82  
*Cryptotreta pallida*, 3(4):91  
*Ctenarytaina eucalypti*, 2(4):109, 3(2):30, 10(1-2):5, 10(3-4):38,42,43,47, 10(5-6):69,71  
*Ctenarytaina gracilis*, 2(4):109  
*Ctenarytaina longicauda*, 6(3):39, 10(1-2):5-7  
*Ctenarytaina obscura*, 2(4):109  
*Ctenarytaina* sp., 2(4):109,111, 3(2):30, 3(3):56, 3(6):144, 4(5):153  
 Ctenuchid moth, 1(6):76  
 cucumber, 1(4):40, 1(6):67, 2(6):166, 3(2):34, 3(3):50, 3(5):107, 4(5):164, 4(5):171  
*Cucumis melo* var *dudaim*, 8(5-6):110, 9(1-2):19  
*Cucumis myriocarpus*, 9(3-4):94  
 cucurbit, 2(5):132, 1(6):76  
 cucurbit virus, 1(4):37  
 Cucurbitaceae, 6(3):34  
*Cupressus macrocarpa*, 6(3):55  
*Cuscuta reflexa*, 9(1-2):20  
 cut flowers, 1(1):5, 6, 1(2):31, 1(4):46, 1(6):78, 2(4):115, 4(3):96, 5(6):290  
 cutworm moth, 4(1):21  
*Cyathus* spp., 6(3):52  
 cycad palm, 6(1):11  
 cycad weevil, 6(1):11  
*Cyclamen europaeum*, 3(6):147  
*Cyclamen indicum*, 3(6):147  
 Cycloconium leaf spot, 4(4):117  
*Cycloconium oleaginum*, 4(4):117  
*Cydnia oblonga*, 7(1-4):11, 8(1-2):15  
*Cylindrosporium*, 3(5):105  
*Cymbidium*, 3(2):34  
*Cymbidium orchid*, 4(3):70  
*Cynara cardunculus*, 1(4):44, 1(6):65, 9(3-4):95  
*Cynara scolymnus*, 6(1):22  
*Cynodon dactylon*, 7(1-4):19  
*Cyperus esculentus*, 9(3-4):96  
*Cyperus rotundus*, 9(3-4):97  
*Cypripedium* sp., 1(4):45  
*Dacus (Zeugodacus) scutellatus*, 6(1):3  
*Dacus bivittatus*, 6(3):31  
*Dacus correctus*, 5(3):219, 6(3):31, 6(5):65, 8(5-6):101  
*Dacus cucurbitae*, 4(4):107, 4(5):165, 5(1):199, 5(5):257, 6(5):64, 8(1-2):5, 9(3-4):130  
*Dacus dorsalis*, 1(2):30, 2(1):8, 2(6):165, 3(1):6, 3(2):28, 3(2):32, 3(3):51, 3(4):87, 3(5):111, 3(6):139, 4(1):15, 4(2):51, 4(4):107, 4(5):153, 4(5):165, 5(1):200, 5(3):221,222, 5(5):258, 6(1):14, 6(1):2, 6(3):30,41, 6(5):65, 7(1-4):6, 7(5-6):76, 8(1-2):4, 8(3-4):42, 9(3-4):130,132, 9(5-6):161  
*Dacus latifrons*, 6(3):41  
*Dacus pallidus*, 6(3):34  
*Dacus scutellatus*, 6(3):30, 9(5-6):164  
*Dacus* sp., 6(3):34  
*Dacus tryoni*, 4(5):164  
*Dacus zonatus*, 3(3):50, 5(3):221, 6(3):31, 9(3-4):130, 9(5-6):162-163  
 daffodil, 4(2):43  
 dahlia, 3(4):90, 7(1-4):9  
*Daktulosphaira vitifoliae*, 5(1):203  
 Dalmatian toadflax, 9(1-2):28, 10(3-4):54  
 dandelion, 2(4):113, 4(4):112  
*Dasineura gleditchiae*, 5(3):229  
 date, 2(1):11, 2(4):110, 6(1):10  
 Datnoff, L., 5(5):251  
 decollate snail, 1(6):73  
 Delphacid planthopper, 2(4):110  
*Delphacodes fulvidorsum*, 2(4):110  
*Delphacodes molinus*, 4(4):114  
*Delphacodes pseudoseminigra*, 3(2):30  
*Dendrobium* sp., 4(4):112  
 Derrick method, 3(4):77  
 desert grape leafhopper, 4(3):89  
 DeShazer, Darvin, 5(3):243, 5(3):246, 6(3):52,55  
*Diachus auratus*, 5(5):266  
*Dialeurodes citrifolii*, 1(1):5, 4(2):53,

- 4(3):85, 4(5):168, 5(3): 226  
*Diaphania nitidalis*, 1(6):76  
*Diaspidiotus liquidambaris*, 10(3-4):49  
*Diaspis boisduvalii*, 1(4):45  
*Diaspis* sp., 5(1):203  
*Diastrophus radicum*, 1(6):76, 10(1-2):14  
 dichondra, 4(3):70  
*Didymellina macrospora*, 6(1):23  
*Dieffenbachia* sp., 1(6):73  
*Dienerella filum*, 1(2):17,18  
 diffuse knapweed, 1(1):7, 1(2):31, 1(4):40, 1(6):67, 3(2):34, 7(1-4):25,29, 8(3-4):77, 9(1-2):11, 9(1-2):69  
*Digitaria* spp., 3(2):24  
 Dilley, Donald, 3(4):89  
*Diocalandra taitensis*, 1(1):5  
*Diospyros*, 8(3-4):48  
*Diploptera* sp., 4(5):172  
*Ditylenchus dipsaci*, 4(1):1  
*Diuraphis noxia*, 5(1):206, 5(5):268, 6(1):12, 6(3):38, 7(1-4):9, 7(5-6):80, 8(1-2):11, 8(3-4):39, 8(5-6):102, 9(1-2):59, 9(3-4):136  
*Diuraphis tritici*, 8(5-6):107  
*Dodonea* sp., 5(3):231  
 dodonea whitefly, 5(3):231  
 dogs, 7(1-4):13  
 Dothistroma needle blight, 2(5):128  
*Dothistroma pini*, 2(5):128  
 Douglas fir, 1(6):60, 3(1):11  
 Dowell, Dr. Robert, 3(5):105  
 downy mildew, 9(3-4):157  
*Dracaena fragrans*, 1(4):46  
*Dracaena marginata*, 1(2):30, 1(4):46, 1(6):75, 1(6):76  
*Dracaena massangeana*, 1(1):7  
*Dracaena sanderiana*, 1(2):30  
*Dracaena* sp., 1(4):47, 1(6):77, 4(5):171  
*Dracaena tricolor*, 1(6):76  
*Dracaena warneckei*, 1(4):46,47  
 dried fruit, 2(1):11  
 dudaim melon, 8(5-6):110  
*Dycinetus morator*, 2(5):151  
 Dyer's woad, 9(3-4):104  
*Dynaspidiotus britannicus*, 6(1):11  
*Dysmicoccus alazon*, 5(3):231, 5(6):290  
*Dysmicoccus mackenziei*, 1(1):6, 5(3):230  
*Dysmicoccus piniculus*, 10(3-4):47  
 earthworm, 1(6):69  
 Easter lily, 4(4):112  
 eastern tent caterpillar, 1(1):5, 1(6):76, 2(5):149, 4(1):21  
*Echinothrips americanus*, 1(6):73  
*Ectomyelois ceratoniae*, 2(1):11, 2(4):111, 4(1):20, 9(5-6):161  
 Ehrhorn's oak scale, 9(3-4):137  
 Eichlin, T.D., 4(4):114  
 elderberry, 4(4):112  
 ELISA, 2(5):132, 3(1):2, 4(3):68, 4(5):124  
 elisa mealybug, 1(6):76, 5(6):292  
*Emilia sonchifolia*, 3(6):146  
*Empoasca fabae*, 5(3):230  
*Empoasca mexara*, 5(3):230  
*Empoasca solana*, 5(3):229, 5(3):230  
*Empoasca* sp., 3(5):108  
*Enarmonia formosana*, 9(5-6):170-172, 10(1-2):19-20, 10(3-4):51  
*Encephalartos manikensis*, 6(1):11  
 endive, 2(4):113, 2(5):130  
*Endothia parasitica*, 3(4):78, 5(1):193, 5(6):278, 278  
 entomogenous fungus, 4(2):58  
 Entomology editors note, 6(5):58  
*Entomophthora planchoniana*, 4(2):58  
 Entomosporium leaf spot, 1(1):13  
*Entomosporium maculatum*, 1(1):13  
*Eotetranychus willamettei*, 9(1-2):48  
*Epiphyllum* spp., 3(6):147  
*Epitrimerus pyri*, 5(5):226, 5(5):266  
*Erigeron canadensis*, 3(3):53  
*Eriobotrya deflexa*, 8(1-2):15  
*Eriococcus azaleae*, 5(3):230  
*Eriophyes r. calycophth.* syn., 3(5):122  
 Eriophyid mite, 3(1):4, 3(5):103,119,122  
*Eriopsylla* spp., 2(4):111  
*Erodium moschatum*, 1(4):44, 1(6):65  
*Erwinia amylovora*, 1(1):13, 1(2):19  
*Erwinia carotovora*, 2(6):183  
*Erwinia chrysanthemi*, 4(3):77  
*Erythroneura elegantula*, 4(3):89  
*Erythroneura variabilis*, 4(3):89  
 ESA Distinguished Achievement, 3(4):89  
 Esparza, J., 1(4):44, 1(6):65  
 Esser, R.P., 1(6):69  
*Euaresta stigmatica*, 3(2):29  
 eucalyptus, 2(1):10, 4(4):109, 4(5):153, 6(3):39, 8(3-4):58  
*Eucalyptus araria*, 2(4):110  
*Eucalyptus bicostatus*, 10(1-2):5  
*Eucalyptus borer*, 4(3):80, 6(1):2  
*Eucalyptus botryoides*, 4(3):81  
*Eucalyptus camaldulensis*, 2(4):110, 4(3):81  
*Eucalyptus cinerea*, 4(3):81  
*Eucalyptus citriodora*, 2(4):110  
*Eucalyptus cladocalyx*, 2(4):110, 4(3):81  
*Eucalyptus cosmophylla*, 2(4):110  
*Eucalyptus diversicolor*, 4(3):81  
*Eucalyptus erythrocorys*, 2(4):110  
*Eucalyptus globulus*, 2(4):110, 4(3):81, 10(1-2):5  
*Eucalyptus gomphocephala*, 4(3):81  
*Eucalyptus lehmanii*, 2(4):110  
 eucalyptus longhorned borer, 7(5-6):75, 8(1-2):3, 8(3-4):39, 10(1-2):8  
*Eucalyptus macarthurii*, 4(3):81  
*Eucalyptus maculata*, 2(4):110  
*Eucalyptus maidenii*, 4(3):81  
*Eucalyptus nicholii*, 2(4):110  
*Eucalyptus occidentalis*, 4(3):81  
*Eucalyptus paniculata*, 4(3):81  
*Eucalyptus polyanthemos*, 2(4):110  
 eucalyptus psyllid, 2(4):109, 110, 2(5):144, 3(2):30, 3(3):56, 3(4):89, 3(6):144, 4(3):91, 10(3-4):42,47  
*Eucalyptus robusta*, 4(3):81  
*Eucalyptus rufida*, 2(4):110  
*Eucalyptus sideroxylon*, 2(4):110, 4(3):81  
*Eucalyptus spathulata*, 2(4):110  
*Eucalyptus* spp., 3(3):53  
*Eucalyptus torquata*, 2(4):110  
*Eucalyptus viminalis*, 4(3):81  
*Eucalyptys leucoxylon*, 10(1-2):5  
*Eucarazzia elegans*, 3(3):45,53, 4(2):56, 5(3):266,228  
*Eucarazzia picta* syn., 3(3):53  
 Eugenia, 8(3-4):48  
*Eugenia jambos*, 5(3):221  
*Eugenia michelli*, 5(3):221  
*Eugenia myrtifolia*, 7(1-4):13  
 eugenia psyllid, 7(1-4):12, 7(5-6):79, 8(1-2):3,15, 9(1-2):59, 9(3-4):137  
*Eugenia* spp., 3(3):50, 4(5):164  
*Eulecanium tiliace*, 3(4):91  
*Euonymous* sp., 4(2):40  
 euonymus scale, 6(1):10  
*Euphorbia esula*, 9(1-2):21  
*Euphorbia oblongata*, 9(3-4):98  
*Euphorbia pulcherrima*, 2(5):135  
*Euphorbia serrata*, 9(1-2):22  
 European alder leafminer, 5(3):225  
 European aster yellows, 2(4):113  
 European bark beetle, 8(5-6):85  
 European chafer, 3(5):126  
 European chestnut, 3(4):79,

- 5(1):193  
 European corn borer, 1(1):5,  
 1(4):46, 9(3-4):140  
 European elm bark beetle, 9(1-  
 2):48  
 European hornet, 5(5):264, 8(3-  
 4):39  
 European silver birch, 3(5):122  
 European white birch, 3(5):122  
*Euscelidius maculipennis* syn.,  
 2(4):112,113  
*Euscelidius schenkii*, 2(4):113  
*Euscelidius variegatus*, 2(4):112  
*Eutetraphytes banksi*, 3(3):56  
*Euthrips orchidii* syn., 3(6):146  
*Euxoa* sp., 2(6):175, 4(1):21  
*Exobasidium vaccini*, 4(5):120  
*Fabraea maculata*, 1(1):13  
 face fly, 5(6):289  
 false garlic, 9(3-4):108  
 false parlatoria scale, 5(6):290  
 fan palm, 3(3):53, 4(2):56  
 Feltwell, J., 1(2):33  
 fern, 1(2):30, 3(4):72  
*Ferrisia virgata*, 3(4):89, 6(1):11  
 fertile capeweed, 9(1-2):45  
 fescue, 4(5):122, 7(5-6):81  
*Festuca elatior*, 4(3):85  
*Festuca* spp., 4(3):70, 4(5):122  
*Ficus benjamina*, 1(1):6, 1(2):30,31,  
 1(4):46,47, 1(6):76,77,78,  
 3(3):52, 3(5):118, 3(6):141,  
 4(3):96, 5(1):203  
*Ficus decora*, 1(1):5,6,7, 1(2):30,  
 1(6):77  
*Ficus nitida*, 4(2):53  
*Ficus robusta*, 2(4):115  
*Ficus* spp., 1(6):77, 5(5):267,  
 2(4):115  
 fig, 2(1):11, 3(3):50, 4(5):154,  
 4(5):164  
 fig psyllid, 6(3):36  
 filth fly, 7(1-4):13  
 fir, 3(4):69, 5(3):227  
 fir-blueberry rust, 3(4):69  
 fir-huckleberry rust, 3(4):69  
 fire blight, 1(1):13, 1(2):19  
 fire disease, 6(1):23  
 fish products, 3(1):10  
 flatheaded borer, 1(6):60  
*Florida wax scale*, 1(1):6, 1(2):31,  
 5(1):203, 1(6):78  
 flour, 3(1):10, 3(2):30  
 flower lei, 4(4):112  
 flower thrips, 4(4):112  
*Fomes annosus* syn., 6(3):55  
 Foote, L., 4(5):156  
 Formosan subterranean termite,  
 9(3-4):154  
 Fortuner, R., 3(3):49, 3(5):109,  
 4(1):2, 5(3):241  
*Fragaria* sp., 3(3):56  
*Frankliniella williamsi*, 8(5-6):85  
*Fraxinus*, 6(1):10, 8(1-2):15  
*Fraxinus excelsior*, 7(1-4):10, 8(1-  
 2):15  
*Fraxinus ornus*, 7(1-4):10, 8(1-2):15  
*Fraxinus syriaca*, 7(1-4):10, 8(1-2):15  
 freezing inciting disease, 4(2):42  
 French lavender, 4(2):57  
 French, A.M., 3(6):162, 4(1):31  
 fruit, 1(6):62  
 fruit fly, 6(1):14  
 fruit spot, 1(1):13  
 fruit trees, 5(1):203  
*fuchsia*, 1(1):6, 1(4):46, 3(3):53, 8(3-  
 4):58  
*fuchsia* mite, 2(4):112, 2(5):145,  
 3(3):56, 3(4):91, 4(1):19  
 Fukushima, C.K., 1(4):41, 2(1):2,4  
 Fuller rose beetle, 6(5):66  
 fungi rating list, 3(6):162  
 fungus, 5(1):193, 5(1):196, 10(1-  
 2):25-26  
*fusarium* basal rot, 4(2):43  
*Fusarium oxysporum*, 5(1):196  
*Fusarium oxysporum f. narcissi*,  
 4(2):43  
*Fusarium* sp., 3(6):136  
 galea melon, 4(5):170  
 garbage, 7(1-4):13  
 garden bagworm, 2(5):146,  
 4(4):114, 5(1):202  
 garden leafhopper, 3(5):108,  
 5(3):229  
 gardenia, 2(6):171  
*Gardenia* spp., 4(2):53  
 garlic, 2(1):4  
*Gasteromycetes*, 5(3):243  
*Gaura coccinea*, 9(3-4):99  
*Gaura odorata*, 9(3-4):100  
*Gaura sinuata*, 9(3-4):101  
*Gazania* sp., 2(5):130  
*Gelechiid* moth, 2(5):145  
 General Nematology, 1(1):3  
*Geococcus coffeae*, 1(6):76, 5(3):233  
*Geoplana mexicana*, 1(6):68  
*Geoplana vaga*, 1(6):68  
 German yellowjacket, 8(3-4):39  
 giant dodder, 9(1-2):20  
 giant foxtail, 9(3-4):119  
 giant knotweed, 9(3-4):114  
 giant ragweed, 9(3-4):81  
 Gill, H.S., 1(1):15  
 Gill, R.J., 1(6):61, 1(6):73, 1(1):2,  
 1(4):45, 3(5):107, 3(6):133,  
 4(2):50, 6(5):58, 8(1-2):21  
 Gillette, W., 1(4):41  
 ginger, 1(2):31, 2(4):115, 5(6):290  
 ginger flowers, 4(3):96  
 ginger, red, 1(2):30,31, 1(4):46  
 gladiolus, 4(4):112  
 glassywinged sharpshooter,  
 5(6):290  
 globe-podded hoarycress, 9(3-  
 4):85  
 glycerol filtration seed assay,  
 5(5):251  
*Glycyphagus domesticus*, 3(2):30,31  
*Gnomenia comari*, 5(3):246  
 Godfrey, M., 7(1-4):5  
 Goheen, Dr. Austin, 5(5):254  
 golden thistle, 9(1-2):37  
 gorse, 9(3-4):125  
 Gracillariid leafminer, 5(3):225  
 grain, 1(2):17  
 grain fields, 6(1):11  
 grape, 2(6):166, 4(3):68, 4(3):89  
 grape groundcherry, 9(3-4):111  
 grape leafhopper, 4(3):89  
 grape phylloxera, 5(1):191,203  
 grapefruit, 1(6):76, 2(6):166, 3(1):6,  
 3(2):28, 3(3):53, 3(6):146,  
 4(2):53, 4(5):164  
 grapeleaf skeletonizer, 2(5):144,  
 5(5):266  
*Graphognathus leucoloma*, 7(1-4):8  
 grass, 1(6):73, 2(4):110, 2(4):112,  
 3(3):55, 3(6):147, 4(4):114  
 grass aphid, 4(3):85  
 Grass, C., 4(3):66  
 grasshopper, 4(1):21  
 green needle, 7(1-4):9, 7(5-6):81  
 green scale, 4(3):96, 5(3):233,  
 5(5):270, 5(6):292  
 green shield scale, 1(1):6, 1(2):31,  
 1(6):77, 3(3):52, 4(3):96,  
 5(3):233, 5(5):270, 5(5):289,292,  
 6(3):43  
 green shield scale, 9(3-4):141  
 green stink bug, 5(5):262  
 greenhouse plant, 1(6):62  
 greenhouse thrips, 1(6):73,  
 3(1):11, 3(2):36  
 greenhouse whitefly, 3(5):108  
 greens, 4(5):172  
 grey mold rot, 4(3):74  
 grocers itch, 3(2):30  
*Gryllodes supplicans*, 7(5-6):79  
 guava, 2(1):10, 3(3):50, 4(5):166,  
 6(5):82

- guava fruit fly, 5(3):217,219, 6(3):31, 6(5):65, 8(5-6):101, 10(5-6):59  
 Gunnell, P., 8(5-6):114  
*Gypsophila paniculata*, 9(3-4):102  
 gypsy moth, 1(1):4,9, 1(2):29,33,34, 1(4):46,56,59, 1(6):75, 2(1):6,23, 2(5):142,149, 2(6):167,175, 2(6):175, 3(1):14, 3(1):77, 3(2):28,37, 3(3):52,58, 3(4):88,97, 3(5):113,126, 3(6):140, 4(1):15,20, 4(2):60, 4(3):95, 4(4):108, 5(1):211, 5(3):223, 5(3):232, 6(5):78, 7(1-4):8, 7(5-6):82, 8(3-4):48, 8(3-4):66, 8(5-6):98, 9(3-4):131,134,154, 10(1-2):17, 10(3-4):39, 10(5-6):64,73,79-83  
 hackberry nipplegall maker, 8(1-2):9, 8(5-6):101  
 Haines, Debbie, 6(5):67  
*Hainesia* leaf spot, 10(1-2):27-29, 10(5-6):89  
*Hainesia lythri*, 10(1-2):27-29, 10(5-6):88  
 hairy maggot fly, 7(1-4):13  
 hairy root, 4(2):41  
*Halimondendron halodendron*, 9(1-2):23  
*Halisdota harisii*, 2(6):175  
 Hall, Dennis H., 4(1):29  
 halogeton, 9(1-2):24  
*Halogenon glomeratus*, 9(1-2):24  
 harmel, 7(1-4):22, 9(1-2):32, 9(3-4):128  
*Harrisiana brillians*, 2(5):144, 3(4):88, 5(5):226  
 Hauck, Amy, 6(5):67  
 Hawaii, 9(3-4):151-154, 10(1-2):20-21  
 Hawaiian thrips, 4(4):112  
 hawthorn, 2(6):166, 3(1):7  
 Hawthorne, Ronald M., 4(2):50  
 hay, 2(5):146, 3(2):30, 3(3):56  
 hay mite, 2(5):146  
 heart-podded hoarycress, 9(3-4):84  
 heartleaf nightshade, 9(1-2):38  
 Heath, L., 1(2):34  
*Hebe buxifolia*, 5(1):198  
*Hebe* spp., 5(1):196  
 Hedin, P., 2(5):134, 3(2):26  
*Heilipus lauri*, 7(5-6):83, 8(1-2):16  
*Heimerliodendron brunonianum*, 3(6):146  
*Helianthus ciliaris*, 9(1-2):25  
*Helicella maritima*, 4(4):109,111, 5(3):229, 5(5):261  
*Heliconia* sp., 3(6):161  
*Helicotylenchus* spp., 3(3):49  
*Helicoverpa zea*, 10(1-2):3  
*Heliothrips haemorrhoidalis*, 3(1):1,11, 3(2):36  
*Hemiberlesia diffinis*, 10(5-6):74  
*Hemicronemoides* sp., 1(2):33  
*Hemiclyciophora* sp., 1(2):33  
 Henderson, J., 3(4):71  
 Henley, Susan, 6(5):67  
 Henry, Don, 5(6):287  
*Heterobasidion annosum*, 6(3):55  
*Heterobostrychus hamatipennis*, 8(3-4):59  
*Heterodera* sp., 9(1-2):68  
 Heteroderid nematode, 1(2):33  
*Heteromeles arbutifolia*, 8(1-2):15  
*Heteropogon contortus*, 9(1-2):26  
*Heteropsylla cubana*, 5(3):225  
*Heterosporium iris*, 6(1):23  
 Higuera, D., 2(6):180, 3(2):24, 3(3):46  
 Himalayan knotweed, 9(3-4):113  
*Hirschmanniella belli*, 4(1):7  
*Hirschmanniella oryzae*, 4(1):2  
 Holdeman, Q.L., 3(4):78  
 holly oak, 3(4):90  
 holly scale, 6(1):11  
*Holothrips* sp., 7(1-4):18  
*Homalodisca coagulata*, 5(6):290  
*Homalodisca lacerta*, 4(5):166  
*Homalodisca* sp., 5(6):290  
*Homotoma ficus*, 6(3):36  
 honey bee, 1(4):49  
 honey locust pod gall midge, 5(3):229  
 honeybee, 3(6):133  
 honeydew, 2(5):133  
 honeyloupe, 2(5):133  
 hop bush, 5(3):231  
*Hordeum murinum*, 5(1):206  
*Hordeum vulgare*, 4(3):85, 5(1):206  
 house mite, 3(2):30  
*Howardia biclavis*, 1(1):6, 1(4):47, 1(6):77, 3(5):118, 3(6):141, 5(3):233, 5(5):267,270, 5(6):292, 6(3):42, 10(5-6):73???
- Hubbard squash, 4(4):112  
 huckleberry rust, 3(4):69  
 hydrangea, 4(4):112  
 hydrilla, 7(1-4):23,28, 8(3-4):73, 9(1-2):27, 9(1-2):46, 9(3-4):127  
*Hydrilla verticillata*, 7(1-4):23,28, 8(3-4):73, 9(1-2):27, 9(1-2):46, 9(3-4):127  
*Hylobius* sp., 1(4):46  
*Hypoxis* spp., 3(6):147  
 Iberian starthistle, 9(1-2):12  
 ice plant, 4(3):70  
 ice plant scale, 1(4):49, 2(6):172, 3(4):91, 3(6):144, 4(5):168, 5(6):280  
*Idioderma* sp., 7(1-4):16  
 Illyrian thistle, 9(1-2):30  
*Impatiens*, 1(6):73  
*Imperata brevifolia*, 9(3-4):103  
 imported bagworm, 4(4):114  
 imported fire ant, 10(1-2):22  
 imported mealybug, 5(3):230  
 Index of Plant Virus Diseases, 1(1):3, 1(2):31  
 Index to Bulletin of CDFA, 4(4):114  
 Indian house cricket, 7(5-6):79  
*Inopus rubriceps*, 5(5):266, 5(6):289, 6(1):9, 6(3):39, 10(5-6):66  
 iris, 4(2):43, 4(3):74  
 iris leafspot, 6(1):23  
 iris mealybug, 1(4):47  
 irisene, 3(6):146  
*Isatis tinctoria*, 9(3-4):104  
 Isle of Wight disease, 3(6):134  
*Ixodes pacificus*, 8(5-6):85, 9(1-2):48  
*Japananus hyalinus*, 5(1):202  
 Japanese beetle, 1(4):46, 2(5):143,148, 2(6):175, 3(4):86, 3(5):105,116,126, 3(6):140, 4(1):21, 4(3):79, 4(4):108, 5(3):223,233, 5(3):232, 5(5):269, 6(3):32,42, 7(1-4):17, 8(3-4):59, 8(3-4):60, 8(5-6):108, 9(3-4):131,140, 10(3-4):41,50  
 Japanese beetle trap finds, 6(5):80  
 Japanese chestnut, 3(4):80, 5(1):193  
 Japanese knotweed, 1(1):7, 9(3-4):112, 9(5-6):178  
 Japanese maple leafhopper, 5(1):201  
 Johnson grass, 1(4):42, 2(6):180, 7(1-4):9  
 jointed goatgrass, 8(3-4):77, 9(3-4):75  
 jonquils, 4(2):43  
 jujube, 5(3):221  
 kalanchoe, 4(2):39  
 kangaroothorn, 9(3-4):74  
 Kapiioho, D., 4(3):66  
 karanda, 5(3):221  
 karnal bunt of wheat, 3(3):46, 3(5):105, 4(3):66, 5(5):251  
 katydid, 4(1):21  
 kernel smut, 2(6):180  
 kernel smut of rice, 3(2):23,24, 3(3):46, 3(5):105

- khapra beetle, 9(5-6):178  
*Kilifia acuminata*, 1(6):76, 4(3):96  
 kiwi, 3(5):128  
 kiwi stem end rot, 1(2):18  
*Koa-Haole*, 5(3):225  
*Kono*, T., 1(4):40, 1(6):67, 3(3):53, 3(5):122, 3(6):131, 135  
*Kontaxis*, Demetrios, 6(1):22  
*Kosta*, Kathleen L., 1(6):63, 2(5):128, 2(6):182, 3(4):71, 5(3):246, 6(1):23, 6(3):57  
*Krass*, Conrad, 3(2):24  
*kuno* scale, 5(3):226  
*Kuo*, F.F., 2(1):2  
*Kuwana* oak scale, 5(3):228, 9(1-2):62, 10(1-2):12  
*Kuwania quercus*, 5(3):228, 9(1-2):62, 10(1-2):12  
*Labiid* earwig, 1(6):75  
 lacewings, 1(4):49  
*Lactuca serriola*, 3(3):53  
 lady bird beetle, 1(4):49  
 lady slipper, 1(4):45, 1(4):47  
*Laetisaria fuciformis*, 4(5):122  
*Lai*, C.M., 1(6):71, 2(6):183, 3(3):48, 3(5):104, 3(6):136, 4(2):39, 4(3):77, 4(5):122  
 lanceleaved nightshade, 9(3-4):123  
 land planaria, 1(6):69  
*lantana*, 3(3):53  
 large white butterfly, 1(2):33  
 late blight, 3(6):136  
*Lavandula dentata*, 4(2):57  
*Lavatera assurgentiflora*, 10(1-2):14  
 lavatera psyllid, 10(1-2):14  
*Lavendula* sp., 3(3):53  
 lead tree, 5(3):225  
 leaf blotch, 5(3):246  
 leaf scald, 1(1):13  
 leaf spot, 1(1):13  
 leafhopper, 4(3):68, 5(6):290, 6(1):8  
 leafminer, 5(5):267  
 leafy spurge, 9(1-2):21  
 leeks, 2(1):4  
 legumes, 4(5):172  
 lemon, 2(6):166, 4(5):154, 4(5):164, 5(5):266  
 lens-podded hoarycress, 9(3-4):83  
*Lepidium latifolium*, 9(3-4):105  
*Lepidosaphes beckii*, 5(5):270, 6(1):9  
*Leptoglossus occidentalis*, 8(5-6):85, 9(1-2):48  
*Leptomastix* sp., 1(1):2  
 lesser snow scale, 1(4):47, 1(6):76, 4(3):96, 5(3):233, 5(5):270, 5(6):290, 292, 9(3-4):141  
 lethal yellowing of palm, 2(4):110  
 lettuce, 1(2):32, 2(4):113, 2(5):130, 4(3):77  
*leucaena* psyllid, 5(3):225  
*Leucoma salicis*, 2(5):145, 3(4):88  
*Leveillula taurica*, 1(4):44, 1(6):65  
*Lichtensia tuberculata*, 1(6):77  
*Ligustrum* sp., 3(3):53  
 lilac, 4(2):58  
 lily, 4(3):70  
 lilybulb mealybug, 9(1-2):47  
 lima, 7(1-4):9  
 lime, 2(6):166  
*Limothrips cerealeum*, 6(1):11  
*Linaria dalmatica*, 9(1-2):28, 10(3-4):54, 10(5-6):90, 93  
 linseed, 3(2):30  
 liquidambar scale, 10(3-4):49  
*Liriomyza* sp., 5(5):267  
*Lissorhoptrus oryzophilus*, 3(4):90  
*Litchi chinensis*, 3(6):146  
 little fire ant, 1(1):5, 1(2):30  
 live oak, 5(6):278  
 locust bean, 2(1):11  
*Lolium* spp., 4(3):70, 4(5):122  
 longhorned beetle, 1(4):46, 3(4):89  
 loose kernel smut, 2(6):180  
*Lophostemon confertus*, 6(3):39  
 loquat, 1(1):13, 2(1):11, 3(3):50, 4(5):164  
*Lorryia formosa*, 2(6):171, 3(6):144, 5(5):266  
 lubber grasshopper, 5(5):267  
*Luscher*, D., 3(2):24, 3(3):46  
 Lygaeid bug, 1(6):78  
*Lymantria dispar*, 1(1):4, 1(2):29, 1(4):46, 1(6):75, 2(5):142, 149, 7(1-4):8, 7(5-6):82, 8(3-4):48, 8(3-4):66, 8(5-6):98, , 9(3-4):131, 134, 154, 10(1-2):17, 10(3-4):39, 41, 10(5-6):64, 73, 79-83  
*Lymantria japonica*, 10(1-2):17  
*Lymire edwardsii*, 1(4):46, 1(6):76  
*Lythrum salicaria*, 9(3-4):128, 106  
 MacKenzie mealybug, 5(3):230  
 Madeira mealybug, 6(3):40  
 madrone, 6(3):56  
 madrone psyllid, 10(1-2):14  
 madrone tree, 10(1-2):14  
 Maggenti, A., 1(1):3  
 magnolia, 1(6):73  
*Magnolia loebneri*, 1(6):71  
*Magnolia soulangeana*, 1(6):71  
 magnolia white scale, 1(1):6, 1(2):31, 1(4):47, 1(6):77, 2(4):111, 3(3):52, 4(3):96, 5(1):203, 5(3):230, 233, 5(5):270, 5(6):290, 292, 6(3):42, 6(5):66, 9(3-4):141  
*Malacosoma americanum*, 1(1):5, 1(6):76, 2(5):149, 4(1):21  
*Malacosoma* sp., 2(5):149, 3(3):58, 3(4):97, 3(5):126, 4(2):60, 5(1):211, 5(3):232, 5(5):269  
*Maladera castanea*, 2(5):149, 151, 2(6):175, 3(5):126, 4(1):21  
 Malaysian fruit fly, 6(3):41  
*Malus domestica*, 8(1-2):15  
*Malus* spp., 5(1):209  
*Malva* sp., 3(3):53  
 mandarin orange, 4(5):164  
*Mangifera indica*, 5(3):221, 8(3-4):48  
 mango, 1(6):62, 2(5):147, 3(3):50, 4(4):108, 4(5):164, 5(3):220, 5(5):267, 5(6):291, 6(1):14, 8(3-4):48  
 mango flower beetle, 4(1):21  
 mango shield scale, 9(1-2):47  
 manilkara, 8(3-4):48  
 maple, red, 5(1):194  
*Maranta*, 2(6):172  
*Maranta leuconeura*, 2(6):173  
 marigolds, 2(1):10  
 maritime snail, 4(4):111, 5(3):229, 5(5):261  
 Mason's eye worm, 4(5):171  
*Matsumoto*, T. Roy, 4(2):49  
*Matsumoto*, T.T., 1(4):41, 2(1):24, 2(6):180, 3(2):24, 3(3):46, 3(5):105, 4(3):66, 5(5):251  
*Matsuo*, W., 4(5):134  
*Mayetiola violicola*, 6(1):8  
*Mayhew*, D.E., 1(1):3, 2(6):179, 3(2):26, 3(5):107, 2(5):132  
*Mayhew*, Paula, 6(3):57  
*Maytenus* sp., 6(1):10  
 mayweed, 8(1-2):29  
*McCarty*, J., 5(5):251  
 McKenzie pine mealybug, 10(3-4):47  
 meadow fescue, 4(3):85  
 meadow sage, 9(1-2):36  
 mealybug, 1(1):5, 6, 1(2):28, 1(4):47, 2(4):112, 3(5):126, 4(2):60, 5(3):233  
 Mediterranean fruit fly, 1(1):4, 1(4):49, 2(1):8, 3(5):111, 4(1):15, 4(2):51, 4(3):79, 5(1):206, 5(5):256, 5(6):285, 6(1):11, 6(3):30, 6(3):40, 6(5):67, 72, 7(1-4):3, 7(5-6):75, 8(3-4):39, 8(5-6):85, 106, 108, 9(1-2):48, 9(3-4):130, 132, 9(5-6):161, 10(1-2):17, 10(3-4):38, 10(5-6):59, 60, 73

- Mediterranean mint aphid, 5(3):228  
 Mediterranean sage, 9(3-4):116  
*Megastigmus pistaciae*, 6(3):36  
*Melanoplus* sp., 2(6):175, 4(1):21  
*Melipona* spp., 4(5):156  
*Melittiphis alvearius*, 6(5):62  
*Meloidogyne chitwoodi*, 3(6):161, 4(1):1  
*Meloidogyne* sp., 1(2):33, 4(1):1, 9(1-2):68  
 melon fly, 3(3):50, 4(4):107, 4(5):165, 5(1):199, 5(5):257, 6(5):64, 8(1-2):5, 9(3-4):130  
 melon mutant strain, 3(1):10  
 melon weevil, 4(5):170  
 Memorial, 4(2):49, 50  
 Memorial fund, 4(1):29  
*Mentha apicata*, 4(2):57  
*Mentha* sp., 3(3):53  
*Merlinius brevidens*, 1(2):33  
*Mesechthistatus* sp., 1(4):46  
*Mesoplus* sp., 7(1-4):11, 8(1-2):15  
 Messinger scale, 2(5):145  
*Metopolophium festucae*, 4(3):85  
*Metrosideros tomentosa*, 8(1-2):16  
 Mexican fan palm, 7(1-4):16  
 Mexican fruit fly, 1(1):5, 1(2):30, 1(6):76, 2(5):147, 2(6):164, 3(1):6, 3(2):28, 3(3):52, 4(2):52, 4(4):108, 5(1):201, 5(5):257, 5(5):274, 5(6):286, 6(5):76, 7(1-4):7, 7(5-6):77, 8(1-2):4, 8(5-6):96, 9(1-2):48, 66, 9(3-4):131, 135, 9(5-6):164, 10(3-4):38, 10(5-6):59, 63  
 Mexican mealybug, 6(3):40  
 Miller, J.A., 2(1):2  
*Milviscutulus mangiferae*, 9(1-2):47  
*Mimulus auranticus*, 1(4):44, 1(6):65  
 mining scale, 1(1):6, 1(4):47, 1(6):77, 3(5):118, 3(6):141, 5(3):233, 5(5):270, 5(6):292, 6(3):42  
 mint, 3(3):53  
 mint aphid, 4(2):56, 5(5):266  
*Misanthicoccus miscanthi*, 8(1-2):17, 9(3-4):140, 10(1-2):4  
 miscanthus mealy bug, 9(3-4):140  
*Misanthus sinensis*, 8(1-2):17  
 mite, 1(1):6, 2(6):171, 172, 3(1):10, 3(3):56, 5(5):266  
 mock orange shrubs, 6(1):11  
 mold mite, 1(4):40, 1(6):67  
 molinus plant hopper, 4(4):114  
*Monolinia fructicola*, 1(2):19  
*Monstera deliciosa*, 1(6):76  
 Montague, Michael, 5(1):196  
 Monterey cypress, 6(3):55  
 Monterey pine, 1(6):62, 3(1):11  
 moss, 1(4):46  
 moth, 1(4):46  
*Muhlenbergia schreberi*, 9(3-4):107  
 mulberry, 3(4):89, 4(5):164, 6(1):11, 8(3-4):58  
 mulberry tree, 6(1):9  
 mulberry whitefly, 2(1):9  
*Musca autumnalis*, 5(6):289  
 Muscid fly, 1(6):76  
 Muscoid flies, 5(3):243  
 mushroom, 3(3):56  
 musk thistle, 8(3-4):77, 9(1-2):9, 9(1-2):69  
 muskmelon, 2(5):133  
 mustard, 6(1):4  
 Mutsu apples, 4(5):168  
*Mycetococcus ehrhorni*, 9(3-4):137  
*Mycocalia* spp., 6(3):53  
*Mycosphaerella tassiana*, 10(1-2):25-26  
*Myndus crudus*, 9(1-2):48  
*Myzocallis borneri*, 3(4):90  
*Myzus persicae*, 2(5):130  
 Nantucket pine tip moth, 3(4):88, 5(5):266, 6(6):289, 6(1):10  
 narcissus, 4(1):1  
*Narcissus* spp., 4(2):43  
 Natal plum, 5(3):221  
 native fruit fly, 3(2):29, 6(1):9  
 neanthebella palm, 3(6):161  
 nectarine, 2(6):166, 4(5):154, 4(5):164  
 NEMAID, 3(3):49  
 NEMAS, 3(5):109  
 nematode, 1(1):3, 1(2):33, 3(3):49, 3(6):161  
 nematode slide collection, 5(3):241  
*Neoclytus conjunctus*, 4(3):80  
*Neophyllura arbuti*, 10(1-2):14  
*Neovossia horrida*, 3(2):24, 3(3):46  
*Neovossia indica*, 3(3):46  
*Neovossia indica* syn., 4(3):66  
*Nepeta cataria*, 3(3):53, 4(2):57  
*Nepeta mussinii*, 4(2):57  
*Nephthytis* sp., 4(3):77  
 nesting whitefly, 10(1-2):3, 8-11  
*Neurospora crassa*, 3(1):10  
 New Pest Advisory Group, 5(1):208  
 New Zealand flax, 10(1-2):3  
*Nezara viridula*, 1(4):47, 4(5):172, 5(5):249, 5(5):261, 6(1):4, 6(3):35, 6(5):66, 6(1):9, 8(1-2):3  
*Nicotiana glauca*, 4(2):39  
*Nicotiana tobacum*, 4(2):39  
*Nidula* spp., 6(3):53  
*Nidularia* spp., 6(3):53  
*Nidulariales*, 6(3):52  
*Nigrospora sphaerica*, 3(1):10  
 nimblewill, 9(3-4):107  
*Nipaecoccus* sp., 2(4):112, 5(3):231, 9(3-4):141  
*Nitrospora sphaerica*, 3(2):30  
 Noctuid moth, 2(6):175  
 North American aster yellows virus, 2(4):112  
*Nothoscordum inodorum*, 9(3-4):108  
 NPAG, 5(1):208  
*Nubilis* spp., 5(3):221  
 nursery infestations, 6(1):28  
 nursery scale detections, 10(3-4):49  
 nuts, 2(1):11  
*Nymphaea mexicana*, 9(3-4):109  
 oak, 2(5):146, 3(4):80  
 oat, 5(1):206, 7(1-4):9  
 oat hay, 2(5):146  
 oblong spurge, 9(3-4):98  
 obscure mealybug, 3(5):126  
*Ocimum basilicum*, 4(2):57  
 odorous house ant, 10(5-6):67  
 oedema, 8(1-2):33  
*Oidiopsis taurica*, 1(4):44, 1(6):65, 6(1):22  
*Oidium* sp., 6(3):57  
 okra, 7(1-4):9  
*Olea chrysophylla*, 7(1-4):10, 8(1-2):15  
*Olea europaea*, 4(2):58, 7(1-4):10, 8(1-2):15  
 oleander, 2(1):10  
*Oliarus hesperius*, 4(5):168, 4(5):169  
 olive, 4(2):37, 58, 4(4):110, 4(4):114, 117  
*Oncometopia orbona*, 4(5):166  
*Oncometopia undata* syn., 4(5):166  
 onion, 2(6):183  
 onion smut, 2(1):4  
*Onopordum acanthium*, 7(1-4):25, 31, 9(1-2):29  
*Onopordum illyricum*, 9(1-2):30  
*Onopordum tauricum*, 9(1-2):31  
 onopordum thistle, 9(1-2):69  
 Opgenorth, D.C., 3(1):2, 3(4):75, 4(3):68, 4(5):124, 5(1):193, 5(6):278, 1(2):18, 19, 8(5-6):114  
*Opogona sacchari*, 9(5-6):170, 10(1-2):20  
 orange, 1(6):76, 2(1):11, 2(4):112, 2(6):166, 171, 3(3):50, 3(3):53, 4(4):111, 8(3-4):48  
*Orchelium* sp., 4(1):21

- orchid, 1(1):5, 6, 1(2):30, 1(4):45, 1(6):77, 78, 3(2):34, 4(4):112, 5(5):267  
 orchid aphid, 5(3):230  
 orchid scale, 5(3):231  
 orchid thrips, 3(6):146  
*Orchidophilus* sp., 5(1):211  
*Orgyria* sp., 10(5-6):63  
 Oriental beetle, 2(5):151, 2(6):175, 3(5):126, 4(1):21, 5(3):233, 5(5):270  
 Oriental fruit fly, 1(2):30, 2(1):8, 2(6):165, 3(1):6, 3(2):28, 3(3):50, 3(4):87, 3(5):111, 3(6):139, 4(1):15, 4(2):51, 4(4):107, 4(5):153, 4(5):165, 5(1):200, 5(3):222, 5(5):258, 6(1):14, 6(1):2, 6(3):30, 31, 41, 6(5):65, 74, 7(1-4):6, 7(5-6):76, 8(1-2):4, 8(3-4):42, 8(5-6):93, 9(3-4):130, 132, 9(5-6):161, 10(3-4):38, 39, 40, 10(5-6):59, 61-62, 73  
 ornamental asparagus, 3(6):142  
 ornamental grass, 2(6):173  
 ornamental pear, 7(5-6):80  
 ornamental pest, 6(3):42  
 ornamental plant, 1(1):2, 1(6):59, 1(6):62  
 ornamental shrubs, 2(5):145  
 ornamentals, 2(4):111, 112  
 ORSTOM, 4(1):3  
*Oryza sativa*, 3(2):24, 4(1):2, 9(5-6):174  
*Ostrinia nubilalis*, 1(1):5, 1(4):46, 9(3-4):140  
 Otitid fly, 5(3):229  
*Oulema melanopus*, 8(5-6):108  
 ovate goatgrass, 9(3-4):76  
*Oxalis corniculata*, 1(4):42  
*Oxalis* sp., 1(4):42  
 Oxford ragweed, 9(3-4):118  
*Pachypsylla celtidismamma*, 8(1-2):9, 8(5-6):101  
*Pachypsylla celtidisvesicula*, 8(1-2):9  
 paddy melon, 9(3-4):94  
*Paeonia* sp., 1(2):31  
 palm, 1(2):30, 1(4):45, 1(6):77, 78, 2(5):145, 3(6):146  
 paniced onion, 9(3-4):79  
*Panicum antidotale*, 9(3-4):110  
*Panicum* sp., 3(2):24  
*Pantomorus cervinus*, 6(5):66  
 papaya, 4(5):164, 5(6):291, 6(1):14, 6(3):34  
 papaya fruit fly, 2(5):147, 5(6):291, 6(1):14  
*Paphiopedilum*, 9(3-4):142  
*paphiopedilum* orchids, 5(3):231  
*Paphiopedilum* sp., 1(1):5  
 Papp, C.S., 1(1):3, 1(4):42, 1(6):74  
 Papp, M.R., 4(4):114  
*Paraleyrodes minei*, 10(1-2):3, 8-11  
*Paraleyrodes naranjae*, 4(4):111  
*Paraleyrodes* sp., 4(4):111, 5(6):289, 8(1-2):14, 8(5-6):106  
*Paraphlepsius irroratus*, 9(1-2):48  
*Paratrylenchus* sp., 1(2):33  
 parasitic plant, 6(5):60  
 parasitic wasp, 1(1):2, 4(3):89  
*Paratrachina fulva*, 1(1):5, 1(2):30, 1(6):78, 2(4):115, 2(6):175  
*Paratrechina longicornis*, 2(4):115, 6(1):2  
*Paratrechina* sp., 5(6):292, 5(3):233  
*Paratrechina vividula*, 1(4):46, 1(6):78  
*Paratrhoza lavaterae*, 10(1-2):14  
*Paratylenchus* sp., 1(2):33  
*Paravespula germanica*, 8(3-4):39  
*Parlatoria pergandii*, 2(4):112  
*Parlatoria pittospori*, 6(1):11  
*Parlatoria proteus*, 1(4):45, 1(4):47, 5(1):203  
*Parlatoria* sp., 5(3):231, 5(5):267, 9(3-4):141  
*Parlatoria ziziphi*, 5(1):209  
*Paromius longulus*, 1(2):30  
 parsley, 1(6):63, 3(6):147  
 partial bunt, 4(3):66  
*Paspalum* sp., 2(6):173  
 passiflora, 8(3-4):48  
*Passiflora* sp., 3(6):146, 4(5):164  
 passion flower, 4(5):164  
 Pauly, B., 4(5):126, 4(2):46, 4(1):8  
 pea, 1(6):63  
 peach, 2(1):11, 2(6):166, 3(3):50, 4(5):154, 4(5):164, 5(3):220, 8(3-4):48  
 peach fruit fly, 3(3):50, 4(3):31, 9(3-4):130, 9(5-6):162  
 peacock spot disease, 4(4):117  
 pear, 1(1):13, 1(2):19, 2(1):11, 2(5):146, 2(6):166, 3(3):50  
 pear blister mite, 1(1):14  
 pear leaf blight, 1(1):13  
 pear psylla, 5(3):219  
 pear rust mite, 5(5):266  
*Pectinophora gossypiella*, 3(6):142, 5(5):261, 5(6):286, 6(3):33, 9(5-6):170, 10(5-6):64-66  
*Peganum harmala*, 7(1-4):22, 9(1-2):32, 9(3-4):128  
*Pennisetum* spp., 3(2):24  
 Penrose, R.L., 4(3):80  
*Penusa dohrnii*, 5(3):225  
 peony ring spot virus, 1(2):31  
*Peperomia dahlstedtii*, 6(3):57  
 pepper, 1(6):63  
 pepper maggot, 4(1):21  
 pepper tree psyllid, 3(5):119, 3(6):144, 4(4):114, 4(5):153, 4(5):168, 5(1):201, 5(3):229, 5(5):266, 6(3):36, 7(1-4):3, 7(1-4):13  
 perennial peppergrass, 9(3-4):105  
 perennial sowthistle, 9(1-2):40  
*Periplaneta fuliginosa*, 3(4):89  
*Persea americana*, 4(4):111, 8(3-4):48  
 Persian catmint, 4(2):57  
 Persian melon, 2(5):133  
 persimmon, 4(5):164  
 pest rating erratum, 1(6):73  
 pest rating list, 1(2):21, 1(4):51  
 pest rating list, Fungi, 3(6):162  
 pest ratings, Bacteria, 4(1):31  
 petunia, 3(3):53  
*Pezizella oenotherae*, 10(1-2):27  
*Pharbitis cathartica*, 3(6):146  
*Pheidole megacephala*, 1(1):5, 1(2):30, 1(4):46, 1(6):78, 2(4):115, 5(5):270, 5(6):292, 5(3):233  
*Phenacoccus gossypii*, 6(3):40  
*Phenacoccus madeirensis*, 6(3):40  
*Phenacoccus* sp., 1(4):47  
*Phillyrea latifolia*, 7(1-4):10, 8(1-2):15  
*Phillyrea media*, 7(1-4):10, 8(1-2):15  
*Philodendron* sp., 3(6):161  
*Phlox* sp., 3(3):56  
 Phoenix palm, 1(1):6  
*Phoenix roebelenii*, 1(6):77, 2(4):111, 2(5):145, 5(1):203, 9(3-4):141  
*Phoma lingam*, 1(6):63  
*Phoma* sp., 3(6):136  
 phony peach disease, 4(5):166, 5(6):290  
*Phoracantha semipunctata*, 4(3):80, 6(1):2, 7(5-6):75, 8(1-2):3, 8(3-4):39, 10(1-2):8  
 phormium mealybug, 10(1-2):3  
*Phormium tenax*, 10(1-2):3  
 photinia, 1(1):13  
*Phrasterothrips conducans*, 7(1-4):18  
*Phrasterothrips omer-cooperi*, 7(1-4):18  
*Phyllocoptes fructiphilus*, 3(1):4  
*Phyllophaga* sp., 2(5):151, 2(6):175, 3(5):126, 4(1):21, 5(3):233, 5(5):270  
 Phylloxera, 5(1):191  
*Physalis virginiana var. sonorae*, 9(1-

- 2):33  
*Physalis viscosa*, 9(3-4):111  
*Physothrips orchidii* syn., 3(6):146  
*Phytophthora cinnamomi*, 3(4):71  
*Phytophthora citrophthora*, 3(4):71  
*Phytophthora infestans*, 3(6):136  
*Phytophthora palmivora*, 1(1):15  
*Phytophthora parasitica*, 3(4):71  
*Picaria* spp., 3(6):146  
pickleworm, 1(6):76  
Pierce's disease, 4(3):68, 4(5):166, 5(6):290  
*Pieris brassicae*, 1(2):33  
Pietersen, Ray, 5(6):278  
pine, 2(4):115, 5(6):289, 8(1-2):17  
pine budworm, 2(4):115  
pineapple, 1(6):76, 4(5):171  
pineapple guava, 4(5):154  
pink bollworm, 3(6):142, 5(5):261, 5(6):286, 6(3):33, 9(5-6):170, 10(5-6):64-66  
*Pinnaspis buxi*, 4(3):96  
*Pinnaspis strachani*, 1(4):47, 1(6):76, 4(3):96, 5(3):233, 5(5):270, 5(6):290, 292, 9(3-4):141  
*Pintalia delicata*, 2(1):10, 6(5):65  
*Pinus* sp., 2(5):128  
*Pinus sylvestris*, 2(5):128  
*Piper* sp., 1(2):31  
pistachio, 3(5):119  
pistachio seed chalcid, 6(3):36  
*Pittosporum diaspidid*, 6(1):11  
pittosporum pit scale, 6(1):11  
*Pittosporum tobira variegata*, 3(3):53  
plains bluegrass, 7(1-4):9  
planaria, 1(6):68  
*Planococcus citri*, 1(1):1,2  
Plant Virus Database, 1(4):38, 2(6):179  
planthopper, 2(1):10, 2(4):110, 3(2):30  
*Plasmopara viticola*, 9(3-4):157  
plum, 2(6):166, 3(4):91, 4(5):164  
plum curculio, 2(5):147  
plumeless thistle, 9(1-2):8  
plumeria logs, 3(5):118  
*Plumeria* sp., 5(5):267, 10(3-4):53  
*Poa* spp., 4(3):70, 4(5):122  
*Podocarpus* sp., 2(5):145  
*Podosesia syringae*, 4(2):37, 58, 4(4):114  
poinsettia mosaic virus, 2(5):134  
pole bean, 4(4):112  
pollards, 3(1):10  
*Polygonum cuspidatum*, 1(1):7, 9(3-4):112  
*Polygonum polystachyum*, 9(3-4):113  
*Polygonum sachalinense*, 9(3-4):114  
*Polystichum munitum*, 3(4):71  
pomegranates, 2(1):11, 7(5-6):80  
ponderosa pine, 1(6):60  
ponderosa pine tip moth, 9(1-2):47  
*Popilla japonica*, 1(4):46, 2(5):143, 2(6):175, 3(4):86, 3(5):116, 3(6):140, 4(3):79, 4(4):108, 5(3):223, 5(5):269, 5(3):232, 6(3):32, 42, 7(1-4):17, 8(3-4):60, 8(5-6):108, 9(3-4):131, 140, 9(5-6):178, 10(3-4):41, 50  
post oak, 5(1):194  
potato, 3(1):2, 3(6):136, 3(6):161, 4(1):1, 4(5):171  
potato leaf roll virus, 3(1):2  
potato leafhopper, 5(3):230  
potato virus, 3(1):2  
potato virus "y", (PVY-N), 10(3-4):53  
poultry, 2(5):146, 4(5):171  
powdery mildew, 6(3):57, 10(3-4):53  
powdery mildew of tomato, 1(4):44, 1(6):65  
powdery scab of potato, 3(6):136  
Pozzi, John, 6(5):67  
*Pratylenchus* sp., 1(2):33  
*Pratylenchus thornei*, 1(2):33  
Prescott, M., 5(5):251  
privet, 4(2):58  
proctrotropoid egg parasite, 2(1):10  
*Prosapia bicincta*, 3(5):126  
*Prosopis strombulifera*, 9(1-2):34  
*Protaetia fusca*, 4(1):21  
*Protea* sp., 2(4):115  
*Protopulvinaria mangiferae*, 9(1-2):47  
*Protopulvinaria pyriformis*, 5(5):270  
*Prunus avium*, 3(5):104  
*Prunus cerasifera*, 5(1):202  
*Prunus cerasus*, 3(5):104  
*Prunus emarginata*, 2(1):9, 3(5):112  
*Prunus persica*, 5(3):221 7(1-4):11, 8(1-2):15, 8(3-4):48  
*Prunus* spp., 2(5):145  
*Pseudaulacaspis cockerelli*, 5(3):233, 1(1):6, 1(2):31, 1(4):47, 1(6):77, 2(4):111, 3(3):52, 4(3):96, 5(1):203, 5(3):230, 5(5):267, 270, 5(6):290, 292, 6(3):42, 6(5):66, 9(3-4):141, 10(5-6):73  
*Pseudobryobia drummondi*, 8(3-4):39  
*Pseudococcus affinis*, 3(5):126  
*Pseudococcus agavis*, 4(2):60  
*Pseudococcus comstocki*, 6(1):9, 8(3-4):58  
*Pseudococcus elisae*, 1(1):5, 1(4):47, 1(6):76, 5(5):267  
*Pseudococcus importatus*, 5(3):230, 5(5):267  
*Pseudococcus obscurus* syn., 3(5):126  
*Pseudococcus* sp., 1(1):6, 1(4):47, 4(2):60  
*Pseudomonas alliicola*, 2(6):188  
*Pseudomonas cerpacia*, 2(6):183  
*Pseudomonas syringae*, 1(6):71, 4(2):42  
Pseudomyiasis, 3(2):32  
*Pseudoparlatoria parlatorioides*, 5(6):290  
*Pseudoparlatoria* sp., 5(3):230  
*Psidium guajava*, 4(4):111, 5(3):221  
*Psydrothrips kewi*, 10(5-6):75, 78  
*Psylla alni*, 5(3):219  
*Psylla pyricola* syn., 5(3):219  
*Psylla uncatoides*, 5(3):226  
*Psyllia rosae*, 3(3):58  
*Psyllia uncata* syn., 6(1):7  
*Psyllid*, 4(3):91  
*Psyllidae*, 8(1-2):21  
*Psyllopsis fraxinicola*, 6(1):9, 9(3-4):137, 10(1-2):12  
*Puccinia horiana*, 9(3-4):158, 9(5-6):175-176, 10(5-6):87-88  
*Puccinia purpurea*, 1(4):42  
*Pucciniastrum goeppertianum*, 3(4):68, 69  
*Pulvinaria mesembryanthemi*, 2(6):172, 3(4):91, 3(6):144, 4(5):168, 5(6):290  
*Pulvinaria psidii*, 1(1):6, 1(2):31, 1(6):77, 3(3):52, 4(3):96, 5(3):233, 5(5):267, 270, 5(6):289, 292, 6(3):43, 9(3-4):141, 10(5-6):73  
pumpkin, 3(5):107  
puna grass, 7(1-4):23, 27, 9(1-2):42  
*Punica granatum*, 7(1-4):10, 8(1-2):15  
purple loosestrife, 9(3-4):106, 9(3-4):128  
purple mustard, 9(3-4):91  
purple nutsedge, 9(3-4):97  
purple sage, 4(2):57  
purple scale, 5(5):270, 6(1):9  
purple starthistle, 9(3-4):88  
*Pycnoscelus* sp., 4(5):172  
*Pycnoscelus surinamensis*, 4(5):171, 7(1-4):15  
*Pyemotes tritici*, 2(6):163, 174, 2(6):174  
*Pyemotes ventricosus* syn., 2(6):174  
pyriform scale, 5(5):270

- Pyrus callerana*, 7(1-4):11, 8(1-2):15  
*Pyrus communis*, 7(1-4):11, 8(1-2):15  
*Pyrus kawakamii*, 8(1-2):15  
*Pyrus malus*, 7(1-4):11  
*Pyrus sativa*, 7(1-4):11, 8(1-2):15  
quackgrass, 9(3-4):78  
Queensland fruit fly, 4(5):164, 10(3-4):39  
*Quercus douglasii*, 10(1-2):12  
*Quercus garryana*, 3(4):80  
*Quercus ilex*, 3(4):90  
*Quercus lobata*, 3(4):83, 5(1):194  
*Quercus montana*, 5(1):194  
*Quercus* sp., 5(3):228  
*Quercus stellata*, 5(1):194  
*Quercus suber*, 3(4):90  
*Quercus virginiana*, 5(6):278  
quince, 1(1):13, 1(2):19, 2(1):11, 4(5):164  
quince leaf spot, 1(1):13  
radish, 1(6):63, 4(4):112  
*Radopholus similis*, 3(6):161, 9(1-2):68  
ragweed, 7(1-4):9  
raspberry root gall wasp, 1(6):76, 10(1-2):14  
rat mite, 2(6):174  
raywood ash trees, 6(1):9  
red alder, 6(3):55  
red band needle blight, 2(5):128  
red banded whitefly, 10(1-2):12  
red horse chestnut, 9(3-4):137  
red imported fire ant, 1(2):30, 5(5):267, 6(3):50, 7(1-4):16, 8(1-2):18, 8(3-4):65, 68, 8(5-6):109, 10(3-4):50  
red maple, 5(1):194  
red scale, 5(5):270  
red thread, 4(5):122  
red wax scale, 1(6):61, 1(6):77, 2(4):112, 5(3):230, 9(3-4):141  
red-banded whitefly, 2(1):9  
red-green lobster claw, 3(6):161  
redbanded clearwing moth, 4(2):59  
Reeves, E., 3(3):53  
Reference review, 2(4):126  
rescue grass, 5(1):206  
*Rhagoletis completa*, 3(2):32, 8(5-6):108  
*Rhagoletis fausta*, 2(1):9, 3(5):112, 5(5):260, 9(5-6):166  
*Rhagoletis indifferens*, 2(1):9, 3(4):88, 3(5):112, 5(3):222, 5(5):260, 265, 6(3):31, 50, 9(3-4):131, 9(5-6):166  
*Rhagoletis mendax*, 3(5):128  
*Rhagoletis pomonella*, 1(1):5, 2(5):135, 3(1):7, 3(5):112, 3(6):141, 5(3):222, 5(5):258, 265, 6(3):31, 35, 7(5-6):78, 8(3-4):46, 8(5-6):109, 9(3-4):131, 133, 136, 9(5-6):166, 178, 10(5-6):64  
*Rhagoletis syphoricarpi* syn., 2(5):138  
*Rhagoletis zephyria*, 2(5):136  
*Rhamnus alaternus*, 7(1-4):11, 8(1-2):15  
rhaps palm, 2(4):115  
*Rhipiphorothrips pulchellus*, 7(5-6):100  
*Rhizoctonia solani*, 1(6):63  
*Rhizoctonia* sp., 1(6):63  
*Rhizococcus americanus*, 1(1):6, 1(4):47, 1(6):77, 3(3):52  
*Rhizotrogis majalis*, 3(5):128  
rhododendrons, 3(4):71  
*Rhopalosiphoninus chicoei* syn., 3(3):53  
*Rhopalosiphoninus salviae* syn., 3(3):53  
*Rhopalosiphum elegans* syn., 3(3):53  
*Rhopalosiphum padi*, 8(3-4):39  
*Rhus* sp., 3(5):119, 5(6):278  
*Rhus typhina*, 5(1):194  
*Rhyacionia bushnelli*, 8(5-6):85, 9(1-2):48  
*Rhyacionia frustrana*, 3(4):88, 5(5):266, 5(6):289, 6(1):10  
*Rhyacionia zozana*, 9(1-2):47  
*Ribes nevadense*, 3(3):53, 4(2):56  
rice, 1(6):75, 2(4):110, 2(6):174, 3(2):24  
rice nematode, 4(1):2  
rice water weevil, 3(4):90  
*Ricinus communis*, 5(3):221  
*Robinia pseudoacacia*, 2(4):108  
robust bamboo pit scale, 9(1-2):47  
*Romalea microptera*, 5(5):267  
root inducing plasmid, 4(2):41  
root rot, 3(4):71  
rootknot of tomato, 4(1):1  
*Rorippa austriaca*, 9(3-4):115  
*Rosa* spp., 4(4):112  
rose, 1(2):33, 2(4):126, 4(5):171  
rose apple, 5(3):221  
rose rosette disease, 3(1):4  
rose rust mite, 3(1):4  
rosemary, 2(4):113, 3(3):53, 4(2):57  
*Rosmarinus officinalis*, 4(2):57  
*Rotylenchoides* spp., 3(3):49  
*Rotylenchulus reniformia*, 3(6):161  
rough comfrey, 9(3-4):124  
rough jointvetch, 9(3-4):126  
*Rubus* sp., 1(6):76, 10(1-2):14  
*Rumex* spp., 3(4):90  
*Rumina decollata*, 1(6):73  
*Ruscus* sp., 6(1):11  
Russian knapweed, 9(3-4):89  
Russian salttree, 9(1-2):23  
Russian wheat aphid, 5(1):206, 5(5):268, 6(1):12, 6(3):38, 7(1-4):9, 7(5-6):80, 8(1-2):11, 8(3-4):39, 8(5-6):102, 9(1-2):59, 9(3-4):136  
rust of aloe, 1(4):41  
ryegrass, 4(5):122, 7(1-4):9  
ryegrass hay, 2(5):146  
sage, 2(4):113, 3(3):53, 4(2):57  
sago, 1(4):47  
Saint Augustine grass, 3(2):30, 4(4):114  
*Saissetia oleae*, 2(6):171  
salina wildrye, 7(1-4):9, 7(5-6):81  
*Salsola vermiculata*, 9(1-2):35  
salt-marsh caterpillar, 5(5):274  
*Salvia aethiopis*, 9(3-4):116  
*Salvia apiana*, 4(2):57  
*Salvia canariensis*, 4(2):57  
*Salvia chionopeplica*, 4(2):57  
*Salvia clevelandii*, 4(2):57  
*Salvia leucophylla*, 4(2):57  
*Salvia mellifera*, 4(2):57  
*Salvia mohavensis*, 4(2):57  
*Salvia munzii*, 4(2):57  
*Salvia officinalis*, 4(2):57  
*Salvia pachyphylla*, 4(2):57  
*Salvia* sp., 3(3):53  
*Salvia splendens*, 4(2):57  
*Salvia vaseyi*, 4(2):57  
*Salvia virgata*, 9(1-2):36  
*Sambucus* sp., 4(4):112  
*Sanctanus sonorus*, 6(1):8  
sandal wood, 5(3):221  
sansevieria scale, 1(4):45, 1(4):47, 5(1):203  
*Sansevieria* sp., 3(3):52  
*Santalum album*, 5(3):221  
sapodilla, 1(4):45, 5(3):221  
sapodilla fruit, 6(3):40  
satin moth, 2(5):145, 3(4):88  
satintail, 9(3-4):103  
Sawyer, Susan M., 5(3):245  
scale, 1(2):28, 5(1):203, 5(1):214  
scanning electron microscope, 1(2):18  
scarab beetle, 1(2):30, 2(5):151, 2(6):175, 3(5):126, 4(1):21, 5(3):233, 5(5):270  
*Scarlet gaura*, 9(3-4):99  
scarlet sage, 4(2):57

- scented gaura, 9(3-4):100  
*Schefflera* sp., 1(6):77, 2(4):115, 3(6):161, 5(3):230  
*Schinus molle*, 3(5):119, 4(2):41, 7(1-4):3  
*Schinus montanus*, 7(1-4):3  
*Schinus terebinthifolia*, 3(5):119, 6(5):66, 7(1-4):3  
 scientific name, 1(2):21  
*Scirrhia pini*, 2(5):128  
*Scirtothrips citri*, 5(5):267  
*Scirtothrips dorsalis*, 7(5-6):100  
*Sclerotinia sclerotiorum*, 1(6):59  
*Sclerotinia* sp., 1(6):63  
*Sclerotium rolfsii*, 4(3):70  
*Scolymus hispanicus*, 9(1-2):37  
*Scolytus multistriatus*, 8(5-6):85, 9(1-2):48  
 Scotch thistle, 7(1-4):25, 31, 9(1-2):29  
 sedge, 2(4):110  
 seed borne disease, 1(6):63  
 seedlings, 3(3):56  
 Seeno, Terry N., 7(1-4):19  
*Seioptera vibrans*, 5(3):229  
*Senecio jacobaea*, 1(1):7, 1(2):31, 9(3-4):117  
*Senecio squalidus*, 9(3-4):118  
 septoria leaf spot, 5(1):197  
*Septoria petroselini*, 1(6):63  
*Septoria* spp., 5(1):197  
*Serica* sp., 3(5):126  
 serological technique, 3(4):75  
 serrate spurge, 9(1-2):22  
*Setaria faberi*, 9(3-4):119  
 sevenspotted lady beetle, 10(1-2):12  
 shade tree diagnoses, 4(1):8, 4(5):126  
 shagbark hickory, 5(1):194  
 shallots, 2(1):4  
 sharpshooter, 4(5):166, 5(6):290  
 sheep, 7(1-4):13  
*Shingolabis hawaiiensis*, 1(6):75  
 shot hole disease, 3(5):104  
 Showers, D.W., 2(1):2, 4, 2(6):180, 3(2):24, 3(3):46, 4(3):66, 5(5):253  
 Sicilian starthistle, 9(3-4):90  
 Sierra currants, 3(3):53  
 silver maple, 2(5):145  
 Sims, K., 1(4):44, 1(6):65, 3(1):4  
*Siphanta acuta*, 1(6):78, 2(1):10, 2(5):145, 2(6):172, 8(3-4):58, 9(1-2):59, 10(5-6):67-68  
*Siphoninus phillyreae*, 7(1-4):10, 7(5-6):75, 80, 8(1-2):14, 8(5-6):104, 107, 9(1-2):59, 9(3-4):136, 154, 9(5-6):166-169, 10(1-2):12, 10(5-6):68-69, 70  
 Sitka spruce, 6(3):55  
*Sitobion luteum*, 5(3):230  
*Sitotroga cerealella*, 2(6):174  
 skeletonweed, 1(4):40, 1(6):67, 8(1-2):29, 8(5-6):110, 9(1-2):15, 9(3-4):127  
 slippery-skin of onion, 2(6):183  
 Smith, J., 1(1):13  
 smokybrown cockroach, 3(4):89  
 smooth distaff thistle, 9(3-4):86  
 smooth groundcherry, 9(1-2):33  
 smut fungi, 2(1):2, 5(5):251  
 smut fungus, 3(2):24, 3(3):46, 4(3):66  
 snail, 1(1):6, 7, 1(4):46, 1(6):77, 5(3):233, 5(5):270  
 snake gourd, 6(1):4  
 snowberry fruit fly, 2(5):136  
 soft rot, 2(6):183  
 soft scale, 1(6):77  
 soil mealybug, 1(4):47, 1(6):76, 77, 3(3):52  
*Solanum cardiophyllum*, 9(1-2):38  
*Solanum carolinense*, 9(3-4):120  
*Solanum dimidiatum*, 9(1-2):39  
*Solanum elaeagnifolium*, 9(3-4):122  
*Solanum lanceolatum*, 9(3-4):123  
*Solanum marginatum*, 9(3-4):121  
*Solanum tuberosum*, 3(6):136  
*Solenopsis invicta*, 1(2):30, 5(5):267, 7(1-4):16, 8(1-2):18, 8(3-4):65, 8(5-6):109, 10(3-4):50  
*Solenopsis* spp., 10(1-2):22  
 Somerby, R.E., 1(6):60  
*Sonchus arvensis*, 9(1-2):40  
*Sonchus oleraceus*, 1(4):44, 1(6):65  
*Sonchus* sp., 3(3):53  
 sonchus yellow net virus, 2(5):130  
 sorghum, 2(6):180, 6(1):8, 7(1-4):9  
*Sorghum bicolor*, 1(4):42  
*Sorghum halepense*, 1(4):42, 2(6):180  
 sorghum rust, 1(4):42  
*Sorghum sudanense*, 1(4):42  
 Sorrell, Mary, 4(2):42  
 sour cherry, 4(5):164, 5(3):222  
 sour orange, 3(5):112, 4(5):164  
 sour skin, 2(6):183  
 soursop, 6(1):14  
 southern blight disease, 4(3):70  
 southern chinch bug, 3(2):29, 4(4):114  
 southern garden leafhopper, 5(3):229  
 southern green stink bug, 1(4):47, 4(5):172, 5(5):249, 5(5):261, 6(1):4, 6(1):9, 6(3):35, 6(5):66, 8(1-2):3  
 sow thistle, 1(4):44, 1(6):65  
 sowthistle yellow net, 2(5):130  
 soybeans, 5(5):262, 7(1-4):9  
*Spathoglottis* sp., 3(6):147  
*Spathiphyllum* sp., 1(2):30  
 spearmint, 4(2):57  
*Spectrobates ceratoniae*, 4(1):20, 6(1):10  
*Sphacelotheca cruenta*, 2(6):180  
*Sphacelotheca holci*, 2(6):180  
*Sphacelotheca sorghi*, 2(6):180  
*Sphacelotheca* sp., 2(1):2  
*Sphaerobolus* spp., 6(3):52  
*Sphaerophysa salsula*, 9(1-2):41  
*Sphenophorus phoeniciensis*, 7(1-4):19  
*Sphenophorus venatus vestitus*, 7(1-4):19  
 spike muhly, 7(1-4):9, 7(5-6):81  
*Spilococcus cactearum*, 9(1-2):47  
*Spilococcus leucopoggi*, 9(1-2):47  
*Spilococcus mamillariae*, 9(1-2):47  
 spinach, 2(4):113, 3(3):56  
 spiraling whitefly, 1(6):77, 4(4):111, 5(3):233, 5(5):270, 5(6):292  
*Spongospora subterranea*, 3(6):136  
 spotted knapweed, 7(1-4):104, 9(1-2):13, 9(1-2):69, 9(3-4):127  
 squarrose knapweed, 9(1-2):14  
 squash, 3(5):107  
 squash leaf curl virus, 3(5):107  
 squash mosaic virus, 1(4):37, 2(5):132  
 squirreltail, 7(1-4):9  
 SSEM, 3(4):75  
 staghorn sumac, 5(1):194  
 stem end rot, 5(3):246  
*Stenotarsonemus furcatus*, 2(6):172  
*Stenolobium stans*, 4(4):111  
 sterile fly release data, 6(5):67  
 stinkhorn fungi, 5(3):243  
*Stipa brachychaeta*, 7(1-4):23, 27, 9(1-2):42  
*Stirellus* sp., 6(1):8  
 stoppers, 4(5):164  
 stored food, 2(6):171, 3(1):10  
 stored grain products, 7(1-4):15  
 straw itch mite, 2(6):163, 174, 2(6):174  
 strawberry, 4(1):1, 7(1-4):9  
 strawberry anthracnose, 8(5-6):114  
 strawberry leaf blotch, 5(3):246  
*Streptomyces scabies*, 3(6):136

- Striga asiatica*, 6(5):60  
*Striga gesnerioides*, 6(5):61  
 striped mealybug, 3(4):89, 6(1):11  
 striped pine scale, 9(1-2):47  
 Sudan grass, 1(4):42, 2(6):180  
 sugarbeets, 5(3):230  
 sugarcane, 2(4):110  
 sunburst locust, 5(3):229  
 sunflower, 2(5):130, 3(3):53,  
   4(2):39, 4(2):56, 5(5): 267  
 Superior Achievement Awards,  
   3(5):105  
 Supkoff, D., 1(4):41  
 Surinam cherry, 5(3):221  
 Surinam cockroach, 4(5):171, 7(1-  
   4):15  
 sweet corn, 3(3):5, 4(2):56  
 sweet marjoram, 2(4):113  
 sweet orange, 4(5):164  
 sweetpotato, 3(6):147  
 sweetpotato whitefly, 3(5):107,  
   10(3-4):33-37, 10(5-6):69,72  
 swinecress, 9(3-4):93  
 swiss chard, 2(4):113  
 swordfern, 3(4):71  
*Symporicarpos albus*, 2(5):136  
*Sympytum asperum*, 9(3-4):124  
*Synanthedon culiciformis*, 4(2):59  
*Syncarpia* spp., 4(3):81  
*Syncarpolytma* spp., 2(4):111  
*Syngonium* sp., 3(3):52  
*Syngonium* sp. syn., 4(3):77  
*Synoxylon sexdentatum*, 1(1):5  
 Syrian beancaper, 9(1-2):44  
 Syrian rue, 7(1-4):23  
*Syzygium paniculatum*, 7(1-4):13  
*Taeniothrips orchidii* syn., 3(6):146  
*Tagetes minuta*, 9(1-2):43  
 Tahitian coconut weevil, 1(1):5  
 tangerine, 1(1):6, 2(4):111, 2(6):166  
 tanglehead, 9(1-2):26  
 tansy ragwort, 1(1):7, 1(2):31, 9(3-  
   4):117  
*Tapinoma melanocephalum*, 1(2):30,  
   1(6):78, 2(4):115, 10(5-6):68  
*Tapinoma sessile*, 10(5-6):67  
*Taraxacum officinale*, 4(4):112  
 Tarsonemid mite, 2(6):172  
 taurian thistle, 9(1-2):31  
*Technomyrmex albipes*, 1(4):46,  
   1(6):78, 2(4):115  
*Tenebrio obscurus*, 7(1-4):14  
 Tenebrionid beetle, 7(1-4):14  
 tent caterpillar, 2(5):149, 3(3):58,  
   3(4):97, 3(5):126, 4(2): 60,  
   5(1):211, 5(3):232, 5(5):269  
 Tephridid fly, 1(6):76, 3(4):91  
 Tephritid fruit flies, 6(1):3, 6(3):30,  
   6(3):34  
*Teratoclytus plavilstskikovi*, 6(1):11  
*Tetraleurodes* sp., 2(1):9, 10(1-2):12  
*Tetramorium* sp., 1(6):78  
 Texas citrus mite, 3(3):56  
 Thailand citrus tree, 8(5-6):109  
*Theba pisana*, 4(4):108, 5(3):229,  
   5(5):261, 6(1):6, 6(3):32, 9(3-  
   4):131, 10(1-2):4  
 Thomas, D., 3(2):26  
 Thompson, Brad, 6(3):55  
 thorn scale, 3(4):91  
 thrips, 1(6):73  
*Thrips hawaiiensis*, 4(4):112, 10(1-  
   2):17  
*Thrips palmi*, 10(1-2):17-18, 10(5-  
   6):75,77  
 thyme, 3(3):53, 4(2):57  
*Thymus vulgaris*, 4(2):57  
 ti leaves, 4(3):96  
 Tidwell, T.E., 1(4):42, 2(4):126,  
   2(5):128, 3(4):69,71, 3(6):136,  
   4(2):43, 4(3):74, 4(4):117, 8(1-  
   2):33  
*Tillandsia chiapensis*, 5(3):230  
*Tillandsia meridiana*, 2(4):112  
*Tillandsia* sp., 1(1):6, 1(2):30,  
   1(4):47, 1(6):78, 5(1):203,  
   5(3):230, 5(6):290  
 tillandsia thrips, 7(1-4):18  
*Tillandsia utriculata*, 2(4):112  
*Tillandsia vicentina*, 2(4):112  
*Tilletia barclayana*, 3(2):24  
*Tilletia barclayana* syn., 3(3):48  
*Tilletia indica*, 4(3):66  
*Tilletia indica* syn., 3(3):46  
*Tilletia* spp., 2(1):2  
 timothy hay, 5(6):292  
 Tineid moth, 1(2):30  
 tobacco, 3(2):30, 4(2):39  
 tobacco mosaic virus, 1(6):63,  
   4(5):118  
 tomato, 1(4):44, 1(6):63, 1(6):65,  
   2(6):166, 3(2):26, 3(3):50,  
   3(3):53, 3(3):56, 4(1):1, 4(2):39,  
   4(5):118, 4(5):154, 4(5):164,  
   6(3):34,35  
 tomato mosaic virus, 3(2):26  
 tomato powdery mildew, 6(1):22  
 torpedo bug, 1(6):78, 2(1):10,  
   2(5):145, 2(6):172, 8(3-4):58,  
   9(1-2):59, 10(5-6):67-68  
 Torrey's nightshade, 9(1-2):39  
 Tortricid moth, 1(6):78, 2(4):115  
 Torymid seed chalcid, 1(1):5  
 touch-me-not, 1(6):73  
*Toumeyella liriodendri*, 6(1):4, 10(1-  
   2):5, 10(5-6):66  
*Toumeyella pini*, 9(1-2):47  
*Toxotrypana curvicauda*, 6(1):14,  
   2(5):147, 5(6):291  
 tracheal mite, 6(1):4, 6(3):33  
*Tradescantia* spp., 3(6):147  
*Tranes* sp., 6(1):11  
 tree, 1(6):62  
 tree tobacco, 4(2):39  
*Trialeurodes vaporariorum*, 3(5):108  
*Trichosanthes cucumeroides*, 6(1):4  
*Trichothecium roseum*, 3(1):10  
 trichura mealybug, 4(3):82  
*Trifolium* sp., 1(2):30  
*Trigona* spp., 4(5):156  
*Trionymus diminutus*, 10(1-2):3  
*Trioza eugeniae*, 7(1-4):12, 7(5-6):79,  
   8(1-2):3,15, 9(1-2):59, 9(3-4):137  
*Trioza gallifex*, 7(1-4):3  
*Tristania conferta*, 3(2):30, 3(3):56,  
   3(6):144, 4(5):153, 6(3):39, 10(1-  
   2):5,6  
 tristania psyllid, 4(5):153, 6(3):39  
 triticale, 7(1-4):9  
*Triticum aestivum*, 3(3):46, 5(1):206  
*Trogoderma granarium*, 9(5-6):178  
*Trypeta augustigena*, 6(1):9  
 tulip, 4(2):43, 4(3):70  
 tuliptree scale, 6(1):4, 10(1-2):5,  
   10(5-6):67  
 tumor inducing plasmid, 4(2):39  
 tupperware fruit fly, 5(5):274  
 turf, 2(6):182, 4(3):70, 4(5):122,  
   5(6):289  
 tussock moth, 10(5-6):63  
 two-lined spittle bug, 3(5):126  
 Tydeid mite, 3(6):144  
*Tydeus californicus*, 2(6):171  
*Tylenchorhynchus clarus*, 1(2):33  
 type specimens, 5(3):242  
*Tyrophagus dimidiatus*, 3(3):56  
*Tyrophagus farinae* syn., 2(5):146  
*Tyrophagus longior*, 2(5):146  
*Tyrophagus neiswanderi*, 1(4):40,  
   1(6):67, 3(2):34,35  
*Tyrophagus putrescentiae*, 1(4):40,  
   1(6):67  
*Tyrophagus similis*, 3(3):56  
*Ulex europaeus*, 9(3-4):125  
*Ulmus davidiana*, 2(4):108  
*Unaspis euonymi*, 6(1):10  
*Unaspis yanonensis*, 3(1):16  
 unidentified tephritid fly, 6(3):34  
 Unruh, T.M., 4(3):70  
 Unshu orange, 3(1):16, 5(1):214  
*Urocystis cepulae*, 2(1):4

- Urocystis* spp., 2(1):2  
*Uromyces aloes*, 1(4):41  
*Ustilago esculenta*, 9(5-6):174  
*Ustilago maydis*, 2(1):1,2  
*Ustilago* spp., 2(1):2  
*Vaccinium ovatum*, 3(4):68,70  
*Vaccinium* spp., 3(4):69  
*Vaginulus occidentalis*, 1(1):7  
Valencia orange, 2(6):171, 3(6):144, 4(5):168  
valley oak, 3(4):83, 5(1):194  
*Vanda* sp., 1(1):5  
variegated grape leafhopper, 4(3):89  
variegated leafhopper, 2(4):112  
*Varroa jacobsoni*, 6(3):37, 6(5):63,83, 7(5-6):84, 8(1-2):5, 8(3-4):55, 8(5-6):100, 9(1-2):58, 9(3-4):131, 9(5-6):165, 10(1-2):4, 10(5-6):67  
varroa mite (see *Varroa jacobsoni*)  
vegetable, 1(6):59, 4(5):172  
*Verticillium albo-atrum*, 1(4):50  
Verticillium wilt, 5(3):246  
Verticillium wilt of alfalfa, 1(4):50  
*Vespa germanica*, 5(5):264, 8(3-4):39  
*Vining peperomia*, 6(3):57  
violet gall midge, 6(1):8  
violet leaves, 6(1):8  
Virginia creeper, 5(5):266  
virus, 1(1):3, 1(4):38, 1(6):63, 2(4):113, 2(6):179, 3(1):2,4, 3(2):26, 3(4):75  
virus diagnoses, 4(5):134  
virus disease diagnoses, 4(2):46  
virus rating list, 4(5):138  
*Vitis californica*, 9(3-4):157  
*Vitis* sp., 4(3):68  
*Vitus rupestris*, 5(1):203  
*Vitus vinifera*, 5(1):203, 9(3-4):157  
*Vryburgia amaryllidis*, 9(1-2):47  
Walker, Pat, 6(5):67  
wall barley, 5(1):206  
walnut, 2(6):166  
walnut husk fly, 3(2):32, 8(5-6):108  
*Washingtonia robusta*, 7(1-4):16  
*Wasmannia auropunctata*, 1(1):5, 1(2):30, 1(6):78, 2(4):115  
watermelon, 3(3):53, 3(5):107,  
4(2):56  
Waters, Virginia, 6(3):55  
wavyleaf gaura, 9(3-4):101  
wavyleaf thistle, 9(1-2):17, 9(3-4):129  
wax scale, 1(4):47  
waxflower wasp, 10(3-4):38,42  
weevil, 1(1):5, 1(4):46  
West Indian fruit fly, 5(6):291, 6(1):14, 8(3-4):46, 8(5-6):101  
western blacklegged tick, 8(5-6):85, 9(1-2):48  
western cherry fruit fly, 2(1):9, 3(4):88, 3(5):112, 5(3):222, 5(5):260,265, 6(3):31,50, 9(3-4):131, 9(5-6):166  
western conifer-seed bug, 8(5-6):85, 9(1-2):48  
western pine tip moth, 8(5-6):85, 9(1-2):48  
western wheat aphid, 8(5-6):107  
wheat, 3(1):10, 3(2):30, 3(3):46, 4(3):66, 5(1):206, 5(5):251, 6(1):12, 7(1-4):9,15  
wheatgrass, 5(1):206, 7(1-4):9, 7(5-6):81  
white apple leafhopper, 4(5):168  
white garden snail, 5(3):229, 5(5):261, 6(1):6, 6(3):32, 9(3-4):131, 10(1-2):4  
white horserettle, 9(3-4):122  
white margined nightshade, 9(3-4):121  
white marked tussock moth, 5(1):211  
white sage, 4(2):57  
white snail, 4(4):108  
white stem filaree, 1(4):44, 1(6):65  
White, J.B., 3(5):104, 3(6):136, 4(2):39, 4(3):70, 4(5):122, 5(6):278, 8(5-6):114  
whitefly, 1(2):28, 1(6):77, 2(1):9, 4(4):111, 5(6):289, 8(1-2):14  
whitefringed beetle, 7(1-4):8  
whitestem distaff thistle, 9(1-2):10  
Wiese, K., 2(5):130, 3(5):107  
wild artichoke, 1(4):44, 1(6):65  
wild garlic, 9(3-4):80  
wild huckleberry, 3(4):68,70  
wild marigold, 9(1-2):43  
wild rice smut, 9(5-6):174  
Wilkerson, M.R., 1(4):38  
Willamette spider mite, 9(1-2):48  
Williams, Douglas J., 9(1-2):47  
witchs broom, 3(4):68,69, 3(5):122  
witchweed, 6(5):60  
woolly oak mealybug, 2(5):146  
woolly whitefly, 1(1):6, 1(4):47, 3(4):88, 4(2):53, 6(1):8, 6(3):36  
woolly distaff thistle, 9(3-4):87  
wormleaf salsola, 9(1-2):35  
*Xanthomonas camp.* pv. *viticans*, 4(3):77  
*Xanthomonas campestris citri*, 4(5):124  
*Xanthomonas campestris* pv. *citri*, 9(3-4):157, 9(5-6):177  
*Xanthomonas malvacearum*, 3(3):48  
*Xiphinema krugi*, 3(6):161  
*Xiphinema* sp., 1(2):33, 9(1-2):68  
*Xylotrechus nauticus*, 4(3):80  
Yanon scale syn., 3(1):16  
yellow leaf disease, 3(5):104  
yellow nutsedge, 9(3-4):96  
yellowspine thistle, 9(1-2):16, 9(3-4):127  
yew, 2(5):145  
*Yponomeuta malinellus*, 5(1):208  
yucca, 1(4):45, 2(4):115, 10(1-2):25  
*Zabrotes subfasciatus*, 6(5):66  
*Zelkova serrata*, 2(4):108  
*Zingiber officinale*, 1(2):30  
zinnia, 2(5):130  
zip code change, 6(5):58  
*Zizania latifolia*, 9(5-6):174  
*Zizyphus spina-christi*, 7(1-4):11, 8(1-2):15  
*Zizyphus* spp., 5(3):221  
*Zonosemata electa*, 4(1):21  
*Zophobas atratus*, 7(1-4):14  
*Zophobas morio*, 7(1-4):14  
*Zophobas rugiceps*, 7(1-4):14  
zoysia grass, 7(1-4):19  
*Zoysia matrella*, 7(1-4):19  
zucchini, 3(5):107  
*Zygophyllum fabago* var. *brachycarpum*, 9(1-2):44  
*Zythia fragariae*, 5(3):246